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ABSTRACT

The 40 papers in this collection cover a wide variety of topics within the broad field of visual literacy. Three preliminary papers discuss visualization through film. The second section, which emphasizes visualization in a social context, contains 10 papers addressing cultural, political, social, and psychological issues, touching upon such diverse topics as the work of Marshall McLuhan, the politics of a Rubik's Cube, and the gender issue of gesture. Five of these papers are from a series of phototherapy workshops which were linked by a common interest in the use of visualization and visual literacy skills in the helping professions. The next section contains 15 papers concerned with research, theory, and technologies, including television, microcomputers, and other high technologies. Among the specific topics discussed are improved written communications, research techniques and measuring devices, Telidon, and video utilization in human relations training. The final 12-paper section deals with visualization in education and includes a complete utilization unit on curriculum applications of critical viewing skills. Numerous diagrams, figures, and illustrations are provided throughout the document to contribute to the visual emphasis. (LMM)

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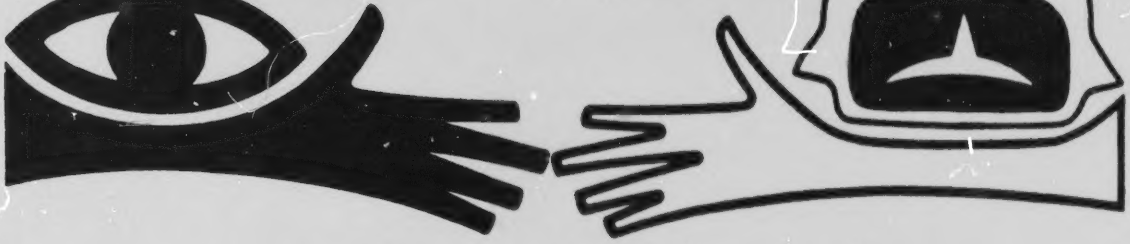
SEEING OURSELVES

VISUALIZATION



IN A SOCIAL CONTEXT

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READINGS FROM
THE 14th ANNUAL CONFERENCE
of the
INTERNATIONAL
VISUAL LITERACY ASSOCIATION

Edited by
ROBERTS A. BRADEN and ALICE D. WALKER

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CONFERENCE OVERVIEW

Roberts A. Braden

At the 14th Annual Meeting of the International Visual Literacy Association the program theme was "Seeing Ourselves: Visualization in a Social Context." The terms "seeing" and "visualization" are natural elements of every IVLA conference. To be able to truly see that which has been visualized is half of being visually literate. The other half is to be able to visualize so that in the same sense others might "see." Therefore as we ponder the essence of visual literacy in conjunction with the other terms of the theme--"ourselves," "social," and "context"--an interrelatedness emerges. Context has as much to do with it as anything. Vancouver. Internationalism. Culture. The National Film Board of Canada. The social graces of Canadian hosts. Arthur Erickson's marvelous Robson Square. Seeing each other--thus seeing ourselves.

Once you get there, Vancouver is a splendid place to attend a conference. It is a superb place for a visual literacy conference. It is a place to see--even in the rain. Vancouver is also a place that is quite supportive of the visual literacy movement. That is why the 1982 IVLA meeting received astonishing local support. For example, there was a grant from The Ministry of Education, Government of British Columbia. The facilities at the Media Center in Robson Square were made available without charge. Capilano College, The North Vancouver School District, the Pacific Regional Office of the National Film Board, and the Open Learning Institute all cooperated as conference hosts.

The open ended character of the conference theme was intended to encourage variety. As the papers which follow will attest, that intent was translated into reality. The presentations spanned the spectra of scholarliness and visualization. The topics ranged widely from social issues to educational applications. The variety included topical concentrations in such specialized areas as phototherapy and in esoteric clusters such as art and the futuristic implications of high technology to visual literacy.

An attempt has been made to group the readings in a meaningful way. Several papers could have been placed in other groupings, but that only tends to confirm our contention that the real tie which binds is a common interest in the broad field of visual literacy.

The categorization which we finally selected leads off with a tribute to the pervasiveness of film at this particular conference. Film was also the medium which, more than any other, kept the conference locked to its theme. The second section, called Visualization in a Social Context, is the most divergent category. In this one grouping are papers which address cultural, political, social, and psychological issues. Next, we lumped together the research reports, the theoretical papers, and the papers which deal with television, microcomputers and other high technologies. In the final grouping we placed papers dealing with Visualization in Education. A special "curriculum" sub-section was created in this category to bring together all of the papers which address the teaching of visual literacy.

In 1969, 1973,1978,1979, and 1980 the papers that accompanied the presentations at IVLA conferences were gathered together and published as "proceedings." Last year we changed the label to "readings." One person complained. Several applauded the change. Actually neither term adequately describes these collected supporting papers that allow a reader to get a rough approximation of the content that was presented. The papers are primarily verbal. They are intended to be read. Thus the label, readings. We continue this new tradition, since in 1982, as in the past, several papers had to be specially written (verbalized) for this volume, because the actual IVLA presentations were primarily visual.

VISUALIZATION IN FILM

Film is a dynamic and persuasive visual medium. As such, the powers of film to communicate and to stimulate cannot be ignored. The social role of film becomes controversial when values, creativity, communication, and persuasion become entwined. In his keynote address, Colin Low speaks to the role of film in a social context and shares his concerns about the current controversy involving the National Film Board of Canada.

Bakony directs our concern to aesthetics and the ways that film communicates meaning. He weaves his own message together with examples and references from both classic and recent films and film literature.

The active participation of the National Film Board of Canada at IVLA '82 inspired a special effort to showcase NFB's contributions to visual literacy. Thus to round out this section, editorial comments precede a collection of NFB confirmation sheets.

VISUALIZATION IN A SOCIAL CONTEXT: THE CANADIAN DOCUMENTARY FILM

by
COLIN LOW
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John Grierson, the founder of the National Film Board, used the phrase education of the imagination to describe one of the possibilities of the documentary film. This idea, as arresting as it is at first glance, seems to me to have a built-in contradiction. Grierson enjoyed contradictions--one sometimes felt he encouraged contradiction. He was an imaginative man. Does education inhibit or liberate imagination? Is it possible to activate real imagination--unique vision through education? These are questions that all people concerned with literacy must ask themselves, because the very act of verbal labelling, defining, can lead to stereotyping. Once defined and properly labelled with a word or a phrase, a subject can be stored in the memory and we are satisfied. Perhaps forever.

I think everyone here will agree that words and phrases are useful tools of thought, but they are also dangerous. So are images--because they fix relationships. Images--moving images, audio visuals--were once seen as liberators in education, releasing us from the verbal or written straight-jacket of words. But we discover that the moving image is also, by its very usefulness, convenience or appeal, capable of enslaving, capable of inhibiting the imagination.

I think we would agree that real education animates and motivates and inspires, but it should not inhibit the imagination. Imagination and culture go hand in hand. They may even be the same thing. For me a culture grows from the imagination, creativity, spirit and energy people bring to their environment, their community, their association.

I would like to talk about the documentary film today in relation to culture and imagination. I would like to share a few of my thoughts with you, which I realize are not without Griersonian contradiction. I hope you will criticize these ideas--give me some feedback--even tear them to ribbons if you feel like it, so I can reshape them and take them back to my colleagues, because we at the Film Board are engaged in a discussion to answer a Government report that implies the Film Board has outlived its usefulness. Our thinking must be clear and our arguments precise if the Film Board is to survive.

"First of all let's briefly examine Canadian culture, the culture we are determined to preserve against the onslaught of American television."

First of all let's briefly examine Canadian culture, the culture we are determined to preserve against the onslaught of American television. Ask Canadians about Canadian culture and they get very nervous. They talk about the Canadian mosaic, the varied ethnic roots, its dual French-English heritage, its British Parliamentary tradition, etc. They might talk about Stratford theatre--Stratford, Ontario, that is--or the Winnipeg Ballet or Arthur Erikson, the great Canadian architect. These things are all signs of a culture, but for me they are not the culture. To find the culture, and the Canadian culture is elusive, you first of all have to decide what it is not.

Canada is not an industrial nation. Furthermore, late in the 20th century it has little hope of becoming one. Ours is a resource based economy--has been, is now, and will probably continue to be for some time. When you go into the large cities of Canada it is hard to believe this fact. Those cities look industrially wealthy, but what are all those glass towers built on? They are built on iron ore, wheat, gas, nickel, copper, oil, wood, pulp, coal, lumber, fish, fur, even water. These resources are sold as quickly as possible, to be processed into manufactured goods outside the country, to be sold back to Canada. That is what the glass towers are doing, and it is very profitable. Around the towers are the industrial parks--the branches of Ford, Xerox, IBM, Sony, and Volvo. These plants have little to do with industrial creativity, invention, research, or commercial strategy. They are owned and managed elsewhere. There are a few contemporary Canadian industrial successes, but they can be counted on the fingers of one hand. But in the Golden Triangle--Toronto, Montreal, Ottawa--as it was called in our age of affluence only a few years back, there developed the branch plant illusion that we were industrially powerful or, if we were not we would be soon, like tomorrow. This delusion was so strong it survives today, after the bloom of affluence has disappeared. Government is infected by this delusion and attempts to sell the Canadian urban myth of industrial creativity abroad, hoping it will become reality. All the politics of Canada, Conservative, Liberal or Socialist, seem designed to hide this immense Canadian industrial inadequacy, this vast embarrassment, this lack of Canadian imagination.

The people who provide the real wealth of the country have no such problem. They are the farmers, fishermen, miners, lumberjacks, oil roughnecks, truckers, stevedores, in effect the resource workers. The hewers of wood and drawers of water. The extractors of resources. They are the repository of whatever unique culture this country ever had. The fact that these people are from varied racial backgrounds changes this dominant cultural fact very little.

A farmer in this country consults the sky with an intense fervour. His narrow growing season is caught between the two iron gates of winter. His faith in fertility is cautious against his experience of frost and hail. But within the narrow margin of potential he is very clever, quite sophisticated, a survivor, a man not without culture. Would you say he has no imagination? If you would dismiss these resource workers as less skilled or cultured than a factory worker or a 9 to 5 clerk--look again--it is not my experience. For me there is a certain degree of independence, a sense of freedom, realism, a tough joie de vivre that you don't find on an assembly line or in an office. This exists among all the hewers of wood and drawers of water. They are not confused about their role in the community and in the country. Every miner, fisherman, engineer, flier, rancher, knows the same tyranny of a Northern climate. They are not the air-conditioned clerks of Toronto Bay Street.

This unique Canadian culture seeks human accommodation, first of all with its climate or landscape, secondly with neighbours, essential to the sanity of long winter nights, essential to emotional and physical survival.

The Canadian culture does not contain power myths. They don't exist. Our only popular high profile heroes have been hockey players, and these players have always escaped from the mine, or the pulp mill, or the desperately constrained railway town. This is historic fact as well as Canadian culture.

We are fascinated by other people's myths of heroic conquest, military brilliance, the myth that violence can solve human problems--but we don't believe them. Our own feats of military accomplishment are real. Canadian miners and farm boys have been tough heroic fighters in three wars, but these triumphs remain buried in the Canadian colonial psyche--like scars. Most families carry some--most don't talk about them. Some people may see that as a negative aspect of Canadian culture. This refusal to make myths of our bloody battlefields. But there are a lot of eccentrics in this country who are not psychotic.

I remember a Newfoundland woman whom I filmed once on a small dock waiting for her men folks to come home from fishing the wild North Atlantic. Later she did not want to see herself in the film. Her husband was exasperated and told her, "But Mother you know you do that all the time. You do worry!" "Yes," she said, "but you don't show it!" This epitomizes the peculiar stoic modesty which is the mirror image of a ferocious pride of survival. If this is not a cultural root which informs much of what Canadians do, then I am a poor observer of the Canadian scene. Canada is a culture of limited but reasonable expectation, and God help the person who would try to sell pipe dreams to these realists.

The moguls of Canadian media, Canadian film and Canadian broadcasting are urban and like their branch manager drinking companions believe the industrial bonanza is right around the corner. They even believe in the Canadian Hollywood. They believe that the resource workers are simply unfortunates--people to be educated for the day of the coming of the next technological revolution. Some say it is the information revolution and that this will be won by those with the smallest silicon chips, the best satellites with the most channels, the telidon with the most feedback. But what kind of culture goes with this? I was in a Canadian old folks' home not long ago with some old timers plugged into Dallas, a favourite Wednesday night escape from the powerless, hygienic corridors of public care. I can't say it was a bad thing to escape briefly from a feeling of no power to J.R.'s delusion of power. But will the ultimate media be only an opiate for this country--an escape? Already Anik III, the first Canadian space shuttle borne satellite, is orbiting with a new era of endless channels. This will force the hand of the nervous Canadian government regulators of broadcasting who are trying to respond to endless lobbies of eager beaver channel developers.

They mumble vaguely about protecting Canadian culture, but they do not know what animates that culture. The large cities of this country have grown out of resource based economy. They service it, bank it, sell it machinery, educate it, and have ended up with the bulk of Canadian population. This population is more and more isolated and insulated from its raison d'etre and is under the delusion that somehow it is self-sufficient--the most important part of the country. It intellectually identifies with the American industrial culture but is emotionally nationalist.

The commercial schizophrenia dominates Canadian broadcasting which is very centralized and of necessity finds itself having to pay for so much long distance hardware that it has no money left for Canadian software. It resorts to advertising, rating, and American programming to fill a very large hole. But one suspects that the broadcasters would not know or appreciate the real Canadian culture if it had the money.

There is the tendency to surreptitiously replace the Canadian themes with something chic, trendy, more international. International camp, which has to jolt the jaded senses with ever higher voltages of sexual and homicidal variation in order to hold, in order to get audience--that is commercial reality. This is true in terms of news and public affairs as well. It's a dull night without a massacre. Do the moguls of broadcasting think this trend is going to diminish? Do they think this trend is useful to the Canadian fabric--the civilized society? Do they think more channels will gain more cultural values?

How can you gauge the quality of information in cultural terms, in social terms, in human terms, in terms of film or television? I have no great expertise in the area, but I believe I can judge the quality of a documentary film by the way the filmmaker treats his human subjects. Does he exploit his subjects for his own thesis, his own bias, his own vanity, his own profit, or is he trying to locate an important truth in collaboration and in cooperation with his subjects for the sake of the community?

There are a lot of Canadian citizens who are too smart to be exploited by the media--and that is a good thing. The Film Board has some of those folks.

> *"The Film Board tradition in documentary has developed around a collaboration with subjects--a mutual respect. For the most part with a few digressions, or errors of judgment, this collaboration has developed into a style which is respected around the world . . . ."*

The Film Board tradition in documentary has developed around a collaboration with subjects--a mutual respect. For the most part with a few digressions, or errors of judgment, this collaboration has developed into a style which is respected around the world--because it reflects Canadian culture. A documentary film should not demean, demoralize, or diminish its human subject, but it also should not deceive its audience. Therein lies the razor's edge. Does a filmmaker have the time to research and understand the multi-faceted truth of a human subject or to explore with a camera a human event in enough detail that the real meaning of the event is revealed? Does he have the wisdom to reveal the truth, and the skill to engage the imagination of his audience? He must have support and encouragement and freedom from strictly commercial constraints to work with this kind of care. The vital importance of this approach in the documentary film should influence all Canadian broadcasting, but it does not.

For instance, a famous Canadian television journalist in a volatile African state finds himself in the immediate aftermath of a brutal village massacre--the repression of a military government. He interrogates two black, stunned survivors for Canadian television. By doing this he marks those pathetic survivors for retaliation should the ruling military by any chance see what the journalist is prepared to run for 20 million Canadians. Slight chance, you might say, but is it? How can he assume his subjects will not be placed in jeopardy? He can't, but he is willing to take this moral risk. And he will never know whether he has damaged his subjects or not. What he does in the interest of hard-hitting journalism jeopardizes the lives of his subjects and will not change the military dictatorship one jot. It is a confused view of the true nature of human rights, because it is based on exploitation--colonial exploitation of another era. This act in my opinion has nothing to do with Canadian culture, but it is repeated frequently in Canadian broadcasting. It is little wonder that some leading media figures cannot recognize what is unique in the tradition of the National Film Board.

This Film Board respect for subjects is inextricably bound up with Canadian culture. They are inseparable. Some would change the role of the National Film Board from an active practitioner in the battle for cultural survival to a training and research role, recognizing vaguely that what the National Film Board does is somehow unique and important. Cut off from active practice--how long would such a tradition survive? How could you transmit such a tradition to the next generation of young filmmakers? The people who make these suggestions do not understand either the nature of Canadian culture or the nature and possibilities or the dangers of the recorded audio visual image.

It is my belief that the major role of the Film Board is to help define the parameters and essence of Canadian culture. The technical evolution of photography of the audiovisual image is remarkable, and this development continues by leaps and bounds. The Film Board has made contributions to this development in its experimental work, but it is the exploration of the human heart of the country that is its legacy. This is achieved by people who love their work and love other people, not by artists of the fast buck.

The moving photographic image has great potential for good; it can be informative and educative and imaginative, but it can also be exploitive--even criminally exploitive--not only exploitive of subject but of audience. We must continue to affirm the values of courtesy, compassion, respect for the dreams and aspirations and difference of our neighbors. This Canadian sense of freedom and individual worth--that would be the best reflection of Canadian culture.

EDITOR'S NOTE:

You may have wondered about the "look" of the print in this book. What you see is not conventional print, although it may become quite common in the near future.

The text of your book of readings was typed into our word processor. (We used "Script" on a big IBM mainframe computer.) The computer, after much prompting, laid the pages out as you see them. Letters are proportionally spaced, lines are both right and left justified, and so forth.

But the letters are a bit fuzzy. Not real fuzzy--just not real crisp. That is because the computer printout was done on an IBM6670 "Laser Printer."

A laser printer is a machine which combines the technologies of xerographic copying and computer printing. Unlike dot matrix printers and daisy wheel printers which form an image by impact (something strikes a ribbon), the IBM6670's laser beam forms characters on a solenium-surfaced drum. The "imaged" drum then picks up toner which in turn is transferred to paper.

SOME ASPECTS OF MEANING IN FILM AESTHETICS

by
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In her book, Against Interpretation, Susan Sontag stresses that in contemporary society it is important for us to recover our senses--to see more, to hear more, to feel more.

This is true because of the tensions under which we live--social dislocations caused by rapid changes in technology, feelings of powerlessness in controlling many of the huge institutions we have created, rampant violence, inflation, unemployment, destruction of the economy, and the threat of thermonuclear war. All of these can produce strong feelings of alienation, depersonalization, and apathy.

At the same time our age has produced a creative technology ("the mechanized muse," Margaret Kennedy called it)--the motion picture which is amply able to help us recover our senses and whose greatest potential is to act as a universal humanizing influence. Both Piaget and William Blake observed that we see with our brain so that film can help us to think and reflect more, to generate insights (as McLuhan said). The strong, sensory, vicarious, and symbolic attraction of film imagery appeals to our whole body, as Pudovkin said, making film a great "teacher."

The essence of this seeing-hearing-feeling-thinking is embodied in film's aesthetic form--its rhythm of imagery, color, and sound. Film's aesthetic form moves us on many levels. Its aesthetic form can communicate to us very powerfully images of ourselves in a social context.

How can we sensitize ourselves to film aesthetics so that viewing films can become a more meaningful experience? To use Pauline Kael's expression, how can we go "deeper into film?" First, let us look at what film aesthetics is. How does it communicate meaning?

Aesthetics, like love or faith, is intangible--sometimes ineffable--but can be deeply moving. We find aesthetics all around us, in the song of a meadowlark or in sipping a snifter of Napoleon brandy. And, as Elliott Eisner pointed out in Educating Artistic Vision (N.Y., Macmillan, 1972, p. 122), a kind of international aesthetic appears in children's art work. Children living in different cultures create visual forms having remarkable degrees of similarity, especially at the pre-school level. They learn early to create evocative forms whose meaning is in the shape of what is expressed. Film directors, too, use evocative aesthetic form to help shape the meaning of what is expressed. In this context we can contemplate some aspects of meaning in film aesthetics.

The making of any film involves the selection and arrangement of "signifying" images in a frame, creating paradigmatic and syntagmatic connotations. This is intrinsically an artistic process. The Life magazine special issue on photography pointed out that when one just moves one's feet while looking through a camera viewfinder, one is selecting and arranging graphic elements in a frame--and that this is a process which is essentially aesthetic. Also, movement of images in the film frame creates a visual rhythm which, like musical rhythm, is also essentially aesthetic.

An example of a simple but highly connotative paradigmatic image can be found in the shot of an apparently bent stick in a glass container of water, symbolizing the deception of our senses in viewing the universe as explicated by Einstein in the 1927 Hollywood educational film, Einstein's Theory of Relativity. This symbol is followed by other equally illuminating visual metaphors. We will consider more complex connotations of more abstract imagery in Ingmar Bergman's feature film, The Seventh Seal, in a moment.

But first it is well to recall that, from its beginnings, a strong attraction of film has been that the pictures move. When one gazes into a fire, it is the movement of the flames that is most hypnotic. Movement of images in film induces a fundamental biological reaction to "reacting to happenings" (as Rudolph Arnheim observes in Film As Art, Berkeley, University of California Press, 1971, p. 161). This reaction is intensified when the "happenings" are orchestrated into an overall rhythm--both within the shot when filming and by juxtaposition of shots in editing, i.e., paradigmatically and syntagmatically.

Rhythm was so effectively created by Leni Riefenstahl in her 1936 Nazi propaganda film, The Triumph of the Will, that movement itself became a powerful symbol. By building and orchestrating the rhythm of form and sound of the more or less prosaic speeches and marches of a Nazi party convention at Nuremberg, Riefenstahl imparted to the resulting film a feeling of invincible progression to a Nazi ideal embodied in the person of Hitler.

Sensitive to this kinetic power, Hans Richter observed that the story in a film is born out of the rhythm of form, color, and sound. Ingmar Bergman remarked that film is mainly rhythm. And Harry Cohn, a sort of Ghengis Khan head of Columbia Pictures, often said that he knew when the rhythm of a film was off because the seat of his pants would become restless.

We respond to the paradigmatic and syntagmatic signifying images in film with both our hearts and our minds. A brilliant example of this conjunction of feeling and thought is evident in the sequence of four opening shots in Bergman's film, The Seventh Seal. The film is an epic parable. It recounts the symbolic quest of a knight, back from the Crusades on his homeward journey through Sweden. Moved by his experiences, he seeks answers to ultimate questions of life, death, good and evil, and the existence of God.

The first shot shows a mordant sky as we hear an unsettling, ethereal chorus on the sound track. The second shot shows a medium close-up of a great, hovering bird of prey as we hear only the sound of the wind. The third shot shows the eternal ocean, breakers rolling onto a shore. The fourth shot reveals the knight and his squire on their homeward journey. The symbolic rhythm of the imagery carries us along.

Cognitively, the sequence begins the narrative and frames it in a context of universality and timelessness. Affectively, it induces feelings of foreboding and doom. As the knight and squire journey ever deeper into a homeland ridden by plague, religious bigotry, inhumanity and fear, the symbolic imagery of the film becomes pregnant with contemporary metaphors for mankind's spiritual malaise and for the threat of thermonuclear war. The flow of imagery envelops us and, vicariously, we ride along with the knight on our own quest, in our own time. In the film's social context the Middle Ages and the 20th century merge.

Bergman moves us by the extraordinary evocative power of the faces and gestures of the people in the film--the hate-filled face of a fear-crazed religious fanatic, the spastic movement of a procession of flagellants whipping themselves, the innocent terrified face of a young girl unjustly accused of being a witch, the love, joy and hope that shine in the faces of Jof and Mia and their baby who symbolize the Holy Family. These are images that are non-verbal, universal and timeless. As Bela Balasz pointed out in his book, Theory of the Film (London: Dennis Dobson, 1952, pp. 40-42):

> The gestures of visual man are not intended to convey concepts which can be expresssed in words, but such inner experiences, such non-rational emotions which would still remain unexpressed when everything that can be told has been told. Such emotions lie in the deepest level of the soul and cannot be approached by words that are the mere reflections of concepts; just as our musical experiences cannot be expressed in rationalized concepts. What appears on the face and in facial expression is a spiritual experience which is rendered immediately visible without the intermediary of words.
>
> It is the expressive movement, the gesture, that is the aboriginal mother-tongue of the human race.

While The Seventh Seal does not avoid the horror and violence that were endemic in the Middle Ages, these are portrayed with taste as negations of humanity, often born out of ignorance and fear, not for sensation and prurience. In the midst of all the evil and darkness, the film's main theme shines through: God is in ourselves, here on earth, not some distant abstraction. We find Him by the feeling we have for our fellows and therein lies mankind's hope for happiness and survival. These sentiments are akin to those expressed by Alexander Solzhenitsyn in his commencement address at Harvard in 1978 and by Jonathan Schell, in his book, The Fate of the Earth.

We see the images (and signs) in The Seventh Seal with eyes that are connected to our brain. We watch film in conjunction with personal associations related to our culture, education, experience, feelings, attitudes--all of which very much influence how we interpret what we see. Part of this interpretation is ethnographic--dependent upon our knowledge of cultural visual conventions. Part of this interpretation is psychological--dependent upon our ability to assimilate the various sets of meanings we perceive and then to integrate the experience. The whole of the interpretative experience, like the whole of the film itself, is greater than the sum of its parts. But it remains an experience that is individual and personal.

We confront The Seventh Seal with everything we are. As one of my students at Concordia University, Juliette Ammar, so beautifully put it: "We absorb what is in us from film." Art is experiential. So is viewing film. So is interpreting meaning in film aesthetics.

The cultural perspectives gained by seeing great films from other countries can help illuminate our fundamental concerns by revealing their universality. The problem of alienation which permeates present day life has been a major theme of the Italian cinema for nearly 40 years. Fellini acknowledges this (in Film: Book I, Ed. Robert Hughes, NY: Grove Press, 1959, p. 100) when he says: "I can tell you what for me is one of the most pressing problems, one which provides part of the theme for all my films. It's the terrible difficulty people have in talking to each other--the old problem of communication, the desperate anguish to be with, the desire to have a real, authentic relationship with another person." Alienation is the theme of his 1954 film, La Strada, a beautiful, pathetic story of the love of a waif for a circus strong man. Its last scene where the rough, strong man (Anthony Quinn) has to face the loss of a love he never could acknowledge, as he walks sobbing and alone in a vast empty universe, is a moment of stunning force. He breaks down in the attempt to deny his own humanity. We can see our loneliness in his.

The honesty and realism of films like La Strada--a heritage from Rossellini, especially in the foreign cinema--can lead to a greater self-awareness and understanding of life. Although it may be difficult at times to associate art, particularly in the great foreign film, with one's everyday job and the turmoil of local and world politics, the humanizing influence of great films can be one of the most positive forces in the development of a well-balanced mind, helping one to cope with and to rise above the multitude of mundane and materialistic matters that absorb most of our attention and time. As Chaplin observed--every art contributes to the biggest art of all--the art of living.

Living, in a social context, is at the core of the films of Jean Lud Godard, progenitor of the French New Wave and, after Rossellini, probably the most influential force shaping film form in the last 23 years. He strives to help us see ourselves in a social context with uncompromising honesty. In doing this, he attempts systematically to destroy any preconceived or fixed point of view from which we might try to interpret a film.

The form of Godard's films is most strongly influenced by Bertold Brecht's technique of distancing audiences from the play so that they will not be carried away by illusion, preconceptions, or romanticism and can respond realistically to the genuine human dilemma presented by the characters. Hence, in Godard's films you are never allowed to forget that what you are watching is not reality but a manipulated image of reality. His actors will sometimes address the camera, commenting on the characters they are playing.

In structure his films are "plotless", reflecting his view that, considering the powerful social and ideological forces in which people find themselves constrained today, life itself often seems plotless. In this view he is profoundly influenced by Kafka's vision of the individual in the grip of monolithic, dehumanized bureaucracies, and this is a central concern in many of his films (Alphaville, Masculine-Feminine, Two or Three Things I Know About Her) and his recent Every Man For Himself.

In style Godard's films are unconventional and eclectic--unconventional to break through preconceptions born out of convention and eclectic to help achieve distancing of the audience, and to a certain extent to reflect the profusion of different media images and sound which permeate our lives.

Godard's style is characterized by cutting across genres from Neo-Realism to the American gangster film, improvisations, long monologues and takes, natural noise on the sound track, experiential techniques (which sometimes lose his audience when, to convey the characters' boredom, he bores his audience), a penchant for the comic strip quality of modern life and a filming technique where the cameras seem to be led by the actors rather than set up in a predetermined pattern. Godard, together with Truffaut, Renais and other New Wave directors, created a new awareness that a film's aesthetic form largely determines how well its meaning comes across--a realization analogous to McLuhan's "the medium is the message."

A recurring theme in many of Godard's films is how people in a materialistic, bureaucratic society become so dehumanized in their relationships that they treat one another like the consumers' goods they are so bent on acquiring. This theme is explicated in Two or Three Things I Know About Her which has prostitution as the metaphor for relationships between people in such a society. The alienation, aimlessness, and sorrow of adolescents in contemporary France is rendered in his film, Masculine-Feminine and the elements of this theme reappear in his latest film, Every Man For Himself.

Godard's continuing influence on directors of the contemporary cinema--together with that of Kafka, Brecht, and Rossellini--is evident in the work of new directors, notably Rainer Werner Fassbinder (untimely deceased), who have created a veritable Renaissance of film in West Germany with The Marriage of Maria Braun, The Tin Drum, and many other films expressing a passionate social concern for the trials and tribulations of every man (and woman) in their personal, commercial, and institutional relationships in the contemporary world.

Conflicts between the individual and totalitarianism have been illumined in an all too brief post-Stalin Renaissance of film in Eastern Europe. The protests of these filmmakers take the form of a sort of subversive aesthetic code, operating through allegory, metaphor, parable, and nuance.

In the USSR, Andrei Tarkovsky's epic masterpiece, Andrei Roublev (1962-67) is such a film. On the surface it tells the story of a famous Russian icon painter of the fifteenth century. Amos Vogel's description (in Film as a Subversive Art, NY: Random House, 1971, p. 150) is non pareil:

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> it is a film--as none before--that reeks with the evil odour of the Middle Ages, an era of brutality, human degradation, abject poverty, rape, senseless mass slaughter, mud, and pagan orgies, when people were at the mercy of both temporal and 'spiritual' powers. But the Middle Ages were also an era in which crazy peasants put on wings to fly in dreams of freedom and crashed to their death; unknown craftsmen fashioned huge church bells in agonies of creation; and artists, in infinite pain and doubt, had to find a way to themselves . . .

More important than Andrei Roublev's massive beauty, the sensuous plasticity of its images, an extraordinary fusion of ideological narrative and aesthetic structure, is its message of human freedom: the pre-eminence of the suffering, questioning individual, as against the mass, of the indomitable spirit of self-realization and the delineation of relations between individual and temporal power. "The production of a work of such scope and humanist grandeur under conditions of extreme bureaucracy and a system of censorship that breeds the most odious conformism, is an act of unprecedented self affirmation."

More recently (1982), the question of moral choice in a dictatorship--this time in Nazi Germany--is the theme of Istvan Szabo's stunningly beautiful film, Mephisto, winner of the Academy Award for Best Foreign Film of 1982. The framing story is of Hendrik Hofgen, a basically decent man, who is afraid to give up his hard won career as an actor after the Nazis take power in Germany. He realizes too late that the intentions of the heart matter little behind the mask of the devil. In the conscience-stilling choice he has made, Hofgen has become the Mephisto he plays. He is caught, Faust-like, in the glare of his blinding ambition. This is shown symbolically in a climactic scene at night in a huge Nuremburg-like stadium. Hofgen is caught in the criss-cross light of several powerful searchlights which he cannot escape because of their blinding glare.

The tyranny and brutality of military dictatorship is devastatingly portrayed by Greek director, Costa-Gavras in his 1981 American film, Missing. Jack Lemmon is an American businessman who flies to Santiago, Chile, to look for his son who has disappeared during the abortive coup. His fruitless search leads him to understand better what kind of a man his son was and to re-examine some of his values.

The brutality of the military overthrow of the Allende government is vividly symbolized in a night scene after curfew in the war-ravaged streets of Santiago where suddenly a terrified beautiful white horse gallops by, pursued by a jeep load of heavily armed soldiers of the junta. It is a haunting image.

In Italy, father-son conflicts against a background of poverty and stultifying tradition are brilliantly revealed in the 1978 film Padre Padrone (My Father, My Master) which has been the first film to win both the grand prize at Cannes--the Golden Palm--and the independently awarded International Critics' Prize. Padrd Padrone is based on the autobiography of Gavino Ledda, a poor Sardinian shepherd boy who just barely manages to survive his father's tyranny and the cultural heritage of centuries to become a scholar and professor of linguistics. The boy's transcendence has the beauty of anger that is channelled and disciplined, an anger like Bunuel's--whose outcome is creative and humane. By widening his horizons, learning Italian and finally by acquiring a university education in the outside world, the Sardinian shepherd boy becomes a person in his own right, and transcends the autocracy of his father.

In form, Padre Padrone is almost a naturalistic folk tale. The directors, Paolo and Vittorio Taviani, maintain a Brachtian distance from the story, avoiding any sentimentality or bias, and the film is more moving because of this. Its style of brief and shocking bursts of drama is reminiscent of Godard, and its jolting rhythm reflects the primitive manners of the society in which the shepherd boy lives.

Man's humanity in rising above conflict within family and culture is shown in one climactic scene. The son has physically fought back against his father for the first time in his life. Later, preparing to leave home, he goes into the room where his father is sitting alone on a bed--to retrieve his suitcase from underneath it. As he kneels to reach for the suitcase he is overcome and presses his head against his father in a gesture of love. His father moves his hand to caress him, then in a flash of anger, raises it to strike and just as quickly, checks himself. It is a moving scene, shown entirely through gesture.

Love relationships in contemporary society are the theme of many current films. In John Schlesinger's 1971 film, Sunday, Bloody Sunday, Sunday, a day that was once devoted for spiritual rejoicing, has become a day of existential reckoning, of the realization of one's aloneness, and of the failure of human relationships. Glenda Jackson emerges from an unsatisfactory love relationship alone, but with integrity intact and a deeper understanding when she says: "I used to believe anything was better than nothing . . . Now I know that sometimes nothing is better."

In each of these films the director manages to create aesthetic form that resonates in mass audiences of variegated human psyches. He utilizes the ability of film, like music, to appeal directly to our native sensibilities. He has an understanding of and sensitivity to the culture of his audiences.

All of the variegated perspectives in the studies of film aesthetics and associated topics center on the search for meaning and form. From Andre Bazin's consideration of the ontology of the photographic image, to Sergei Eisenstein's theories of the collision of ideas, to Ray Birdwhistle's films in his studies of Kinesics in Context, to Brathes' work on Mythologies, to Elliot Eisner's studies in Conception and Realization, to George Gerbner's probes of the Symbolic Environment, to James Monaco's lucid exposition of semiology in How to Read a Film--all these studies seek to explore the power of form to inform.

One finds the power of form to inform as a thematic motif in John Fowle's story, The Cloud. Here, form is considered in the signs of overt behaviour. The scene is a picnic, seemingly quiet on the surface but with undertones of conflict and desire. The heroine, Catherine, is drawn into conversation with a charlatan of a television producer on the make, who affects an interest in Barthes' Mythologies. Speaking of his work she says:

"I think people like Barthes are . . . interested in making people aware of how they communicate . . . the relation between the overt *signs*, whether they're verbal or not and the real meaning of what is happening." Meanwhile, the producer makes overt signs which pretend to empathy and interest, but which she reads correctly as the calculating, manipulative, sexual approach that they are. Catherine is isolated at the picnic because she is the only person there who seems to be able to read the overt signs of behavior.

Sometimes the signs (images) in a film involuntarily create a meaning that was not intended. Speaking of the image created by Hollywood star Humphrey Bogart in the 1940's and 1950's, Eric Rhode observes that, for generations of adolescents [Bogart] came to represent the ideal of integrity under pressure--"as well as being a one man advertising agency for the cigarette."

How effectively imaginative aesthetic form combined with psychological acuity can be used manipulatively, is evident in many television commercials, propaganda films, political campaign media, and television situation dramas. These visual media outside of school occupy such a major portion of students' attention that Marshall McLuhan observed that most learning occurs outside the classroom. They are produced with professional flair. They can frequently be used creatively as a referential framework in discussing learning concepts in the classroom. But to the extent that some television commercials, situation dramas, and feature films present a social context in which greed, sexism, narcissism, and violence are promulgated as virtues, they can exert a strong dehumanizing influence.

Symbolic form is sometimes used manipulatively in particular contexts to evoke subconscious emotional reactions. Implying the dangers inherent in exploiting this aesthetic power, the Hungarian film theorist, Bela Balasz, presciently wrote in 1923: " . . . fascism has shown us where the tendency to reduce human culture to subconscious emotions in place of clear concepts would lead humanity." The power of a film aesthetic to evoke these subconscious emotions became strikingly evident in 1936 in the form of Leni Riefenstahl's aesthetically stunning Nazi propaganda film, *The Triumph of the Will*. Jose Ortega y Gasset best described the subconscious, atavistic emotions evoked by the film's aesthetic in his words: "When man is beside himself and not in himself, he becomes animalistic." It is interesting to note some of the parallels between the aesthetic techniques used in this film and in those used in some television commercials--the generation and exploitation of *anxiety*, appeal to people's desires to feel superior, and others.

In contrast, humanizing influences are evident in the aesthetic of numerous feature and documentary films. (Any distinction between feature and documentary film--as Vlada Petric at Harvard has pointed out--is purely academic.) These films range all the way from Alistair Cooke's illuminating series on American history and character, *America* to Jean Renoir's beautiful symbol of brotherhood, *La Grande Illusion* to Robert Altman's elegiac vision of contemporary American life in *Nashville* to the Canadian National Film Board's quest of the human spirit in *City of Gold* to Hugh Hudson's lyrical hymn to human excellence in *Chariots of Fire*. "Beauty will come in good time to inhabit the statement which is honest and lucid and deeply felt and which fulfills the best ends of citizenship"--so spoke the founder of Canada's National Film Board, John Grierson.

Imaginative symbolic form permeated the television commercials used pervasively throughout the 1979 Canadian Federal election campaign and the 1980 American Presidential election campaign. And in Roots, a filmed television series about the history of Blacks in America, eloquent visual imagery helped attract an audience estimated at 130,000,000 people.

Meanwhile, the proliferation of satellite and computer assisted film and television retrieval and distribution systems has so intensified the permeation of these media in our culture that one is reminded of Marshal McLuhan's description of media as the nervous system of society.

These developments have made it possible for a tremendous growth to occur in the power of imagery in film, television and other media to structure the symbolic environment of society as George Gerbner at the University of Pennsylvania demonstrated so well, particularly in his address on Mass Media and the Social Values given at the International Communications Association in Montreal in January, 1977. As these media are almost always pre-recorded, discourse with them is not possible.

Exercise of the power to structure this symbolic environment poses important questions of social responsibility, Gerbner notes. Do changes or trends in the symbolic environment influence our perception of changes in reality? Do children see television as super-reality, and their own experience as the exception? And, just as ecologists are concerned with testing the nature of the physical environment, should we not also be concerned with testing the nature of the symbolic environment?

". . . visual literacy becomes increasingly important to interpret meaning in film aesthetics and in the total symbolic environment."

It becomes obvious that visual literacy becomes increasingly important to interpret meaning in film aesthetics and in the total symbolic environment. Only thereby can we develop the independent critical judgment, Gerbner reaffirms, "to look critically at and to formulate the issues behind what is more and more becoming the science and art of the management of the total imagination."

Far from managing the imagination, great humanistic films help liberate it. A case in point is Hugh Hudson's lyrical 1981 film, Chariots of Fire, winner of the Academy Award for the Best Foreign Film. It tells of two Cambridge students' strivings to excel as runners in the Paris Olympics of 1924--not too far from the holocaust of World War I. Harold Abrahams, who is Jewish, runs to exorcize prejudice through the stamp of excellence; Eric Liddell runs with evangelistic fervour to promulgate Christian brotherhood. The aesthetic of the film derives from a first-rate, beautifully visualized screenplay, realized with high style. The story unfolds in a panorama of passionate, universal imagery, historically grounded, yet timeless and beautiful. The very loveliness of the film's color and decor seem to symbolize the nobility and humanity of the protagonists' quest. The film is unabashedly romantic, sentimental, and realistic at the same time. But throughout one always feels free to draw one's own conclusions.

The aesthetic of films like Chariots of Fire, while pregnant with meaning, is not directed at manipulating the audience. It honours the audience.

In Agee on Film (NY: McDowell, Oblensky, 1958-60, p. 330), James Agee puts it well:

> [Enduring films] are not acts of seduction or of benign enslavement but of liberation; and they require, of anyone who enjoys them, the responsibilities of liberty. They continually open the eye and require it to work vigorously, and through the eye they awaken curiosity and intelligence. That, by any virile standard, is essential to good entertainment. It is unquestionably essential to good art.

And it is a fitting summation for the topic of "Some Aspects of Meaning in Film Aesthetics."

THE NATIONAL FILM BOARD: FILM IN A SOCIAL CONTEXT

by

ROBERTS A. BRADEN
Virginia Tech
Blacksburg, Virginia

The National Film Board of Canada is internationally recognized for excellence in filmmaking. Theirs is a reputation well earned. For more than four decades one outstanding film after another has emerged from the creative cornucopia of the NFB. In film circles any three-day program that offered the screening of a dozen and a half NFB films would be an "event." Make the films the best of recent vintage, include premieres, and have introductions and discussions by the filmmakers and other Film Board luminaries. Then the event alone would be classified as an important film festival. But that's not all. Add hallways lined with public exhibitions of the eye-catching, mind-bending still photography of Michael Semak, Alvin Comiter, and Francis Coutellier. Now we're talking about a visual spectacular. Then for punctuation provide a witty, dynamic "keynote" showing of gorgeous color slides by Freeman Patterson, one of the world's truly great nature photographers, and you begin to describe the contribution of the NFB to the 1982 Vancouver meeting of IVLA. A few words about the ending in a moment . . . .

From the first session to the last, the presence of the NFB was felt. In the spirit of "Visualization in a Social Context," NFB's two Bonnies made an early impact. Bonnie Kreps, a young filmmaker of exceptional promise, was on hand to discuss her current work on a film about Canadian farm women and to give added insight into her commendable documentary, No Life for a Woman. Bonnie Klein presented and discussed her highly acclaimed social issue film, Not a Love Story--a film about pornography which is experiencing higher viewer demand than any of the 4000 NFB films that preceded it.

The premiere of Arthur Erickson was particularly appropriate to the conference being held in the Media Center of Vancouver's impressive Robson Square. Arthur Erickson, Canada's most famous architect, was the designer of Robson Square--an accomplishment duly noted in the film.

The first paper in this volume is a strong statement by Colin Low concerning the current threat to the NFB emanating from the Applebaum-Herbert Committee Report (which suggests that the Film Board has served its purpose.) To confirm that the Film Board still has much to contribute, one need only view Low's sensitive Standing Alone, a 1982 sequel to his earlier (1963) Circle of the Sun. The composite is a powerful longitudinal film study about a Plains Indian, his sense of heritage, and his cultural roots.

We would not quibble with the Applebaum-Herbert Committee about NFB having succeeded at portraying the heritage of Canada and Canadians. We would hope that the ultimate fate of NFB will take into consideration the Film Board's continuing cultural contributions and international leadership in documentary film, art film, and the wonderful and varied techniques of animation--many of which originated with the Film Board.

Nearly half (8) of the films presented at Vancouver used animation. At least two unique filming techniques were shown, and of the animated films, both Luna Luna Luna and The Tender Tale of Cinderella Penguin were done without words--pure exercises in visual literacy. This and other evidence suggest that the staff of NFB and the members of IVLA are kindred spirits. Want more evidence? See Figure 1.

Filmmakers are constantly confronted with the need to bring their work to an appropriate climax. At Vancouver is was a Gala climax. The conferees were treated to clips from Gala. It is a release which began filming as an exercise in visual history and indeed after editing is an important new art film. Then NFB sponsored a live performance by the Anna Wyman Dancers, one of the eight excellent dance troupes featured in the film. The audience response was so enthusiastic that a full 90 minute sneak premier of Gala was offered as an encore. Spectacular! Climax!

The National Film Board of Canada has graciously made available "confirmation sheets" of the films shown at the 1982 IVLA Vancouver conference. Canadians may make inquiries or order films from any of 30 NFB regional offices or from the head office:

National Film Board of Canada
P. O. Box 6100
Montreal, Quebec H3C 3H5

Residents of the United States should contact the New York office:

National Film Board of Canada
16th Floor
1251 Avenue of the Americas
New York, New York 10020

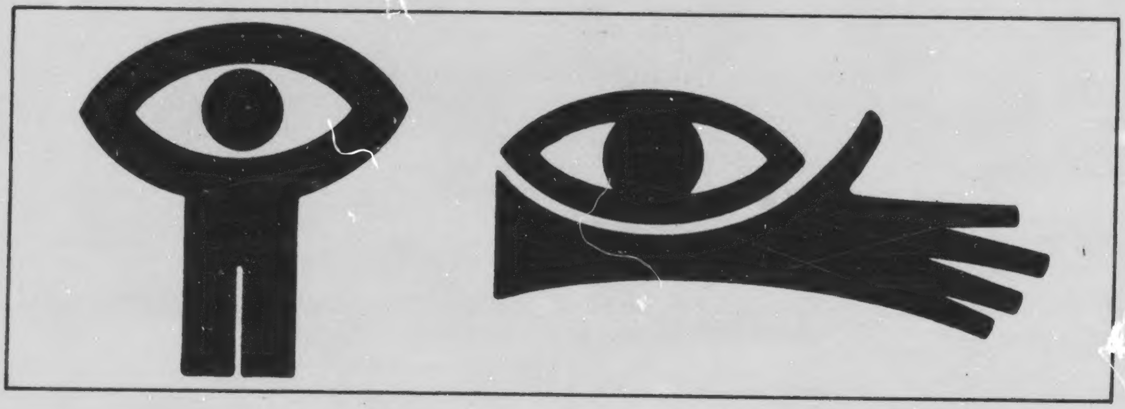

Figure 1. NFB Logo (left), IVLA Logo (right).

The National Film Board of Canada
presents

NOT A LOVE STORY

a film about

PORNOGRAPHY

Produced by the National Film Board of Canada

National
Film Board
of Canada

Office
national du film
du Canada

Not a Love Story: A Film About Pornography

About the Film

Linda Lee Tracey and Bonnie Sherr Klein

Not a Love Story is a thought-provoking, emotional chronicle of two women — Bonnie Sherr Klein, filmmaker and Linda Lee Tracey, a Montreal stripper. Together they set out to explore the world of peep shows, strip joints and sex supermarkets. Although their backgrounds are very different, both are motivated by a desire to know more about pornography — why it exists, what forms it takes and how it affects relations between men and women.

The film does not invent or promote pornography. It does, however, make clear the extent and growth of its existence. There is no pornographic image in the film which is not available, legally or under the counter, anywhere in North America. Canada is a burgeoning market of the lucrative American "porn" empire. With annual sales well in excess of five billion dollars, pornography is no longer an isolated phenomenon but a pervasive part of our culture.

The film offers insights and perspectives from men and women, both inside and outside the "business". There are frank interviews with people who earn their living in the porn trade — among them strippers; performers; Suze Randall, a photographer for *Hustler* magazine and David Wells, publisher of five of Canada's most profitable "men's entertainment" magazines.

Not a Love Story also includes interviews with some of pornography's most outspoken critics. Prominent American feminists Kate Millett, Robin Morgan, Kathleen Barry and Susan Griffin provide thoughtful analyses of pornography as an expression and a cause of sexual inequality as well as an arena for violence practised against women. Canadian writer and feminist Margaret Atwood makes a personal statement through a reading of her poem, "A Women's Issue." The emotional and psychological effects of pornography on men are explored by a discussion group organized by "Men Against Male Violence." Research psychologist Dr. Edward Donnerstein links aggressive pornography with aggressive behavior in men.

Not a Love Story, by the very nature of its subject, contains some sexually explicit scenes. While these may be embarrassing and, in some cases, shocking, none has been used gratuitously. No amount of verbal description could adequately recreate the impact of the images themselves. Only by seeing them can the viewer begin to fully realize the enormous impact of pornographic imagery on our society.

Not a Love Story is clearly a voice against pornography. While the film does not attempt to provide solutions to this complex social problem, it does raise many questions. It is not so much a call to specific action as it is an appeal to the viewer's emotions and intellect. By increasing our awareness of the harmful nature of pornography and by clearly revealing its destructive consequences, the film allows us to recognize and evaluate the effects of pornography on our own lives. By creating a forum for discussion it encourages us to find possibilities for positive personal action.

Linda Lee Tracey and Suze Randall

A

After the Film

The following quotes, questions and recommended reading list have been included for consideration after screening the film. They are for immediate or for future use, for personal contemplation or for group discussion. It is their purpose both to recall and to go beyond some of the specific issues raised in the film and to encourage both men and women to reflect and to act on them.

Some Questions for Thought and Discussion

- How aware are you of the extent of pornography's influence in your life? How much subtle pornographic imagery have you noticed in commercial advertising, for example?
- To what extent has pornography, in any of its various forms, affected your self-image as a man or as a woman? How has that affected your relationships with others?
- In the film, Kathleen Barry states that it is better to know about pornography, no matter how awful that knowledge might be. Is it important that we confront pornography? How do we deal with it, as individuals or in groups, now that it is part of our popular culture?
- The distinction between pornography and erotica is much debated. The dictionary defines the word *erotica* as being derived from the Greek word *eros*, meaning love; whereas *pornography*, also from the Greek, means literally *the depiction of female prostitutes*. How do we distinguish between pornographic and erotic images? Where do we look for positive sexual images?
- How can we help young people to develop their sexuality so that it is based on true human emotions rather than on media-created fantasies?
- Much of what the film says about the dehumanizing of women in pornography also may be applied to the depiction of children and men in pornography. What is it in our society that causes us to objectify human beings?
- The most frequently discussed strategy for combatting pornography is censorship. However, there is no concensus on this issue. Many who have grappled with the problem are torn between their commitment to civil liberties and a concern for the social consequences of pornography. Is censorship, in fact, an effective method of dealing with pornography? What are alternative strategies?

Bonnie Sherr Klein and Kate Millett

Robin Morgan

Quotes from the Film

Kate Millett — Writer/Artist

"What's disturbing about pornography for me is that it's so unsexy. It's all mixed up with old dreadful, patriarchal ideas that sex is essentially evil and that the evil in it is female."

David Wells — Editor/Publisher of *Rustler, Elite* magazines

"I would say that the standards are a little rougher. The magazines (now) are more explicit, possibly because of women's liberation. Men have started to feel emasculated and they like to fantasize about women. They would prefer to dominate these women."

Member of "Men Against Male Violence" discussion group

"You're the victim of your fantasies because you perpetrate the male myth of performance, goal orientation… and the ultimate irony is that they (the fantasies) are really self-inflicted."

Kenneth Pitchford — Poet/Writer

"The more that women can be just cardboard cutouts, or bunnies, or pets, the easier it is not to have any feeling for them, not to have any compassion. Compassion is a very dangerous thing. It cuts across that domination relationship."

Susan Griffin — Author

"Pornography is like a film that's projected on a blank screen and that blank screen is women's silence. Pornography is filled with images of silencing women. Our silence is the way in which our status as objects is made real."

Dr. Ed Donnerstein — Research Psychologist

"There's something about the combination of pornography and aggression which becomes a very powerful image. If we list all the variables which we think can increase aggressive behaviour and rank the top ten, probably eight of them are thrown together in aggressive pornography."

Kathleen Barry — Author

"It may be just simply how you treat your secretary four weeks from now. It may be what you decide you want your wife to do because she isn't as interesting as what you see in the films. But somehow, it (pornography) gets translated back. And that's why all of us remain as potential, if not real, victims of what goes on in those theatres."

Recommended Reading

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Millett, Kate. *Sexual Politics.* New York, New York: Doubleday, 1970.

Morgan, Robin. *Going Too Far.* New York, New York: Random House, 1977.

Rich, Adrienne. *Of Woman Born: Motherhood as Experience and Institution.* New York, New York: W.W. Norton, 1976.

The above list is by no means all-inclusive. A more extensive bibliography on *Violence Against Women,* published in March, 1980, is available for $3.00 per copy from Women In Focus, #6-45 Kingsway, Vancouver, British Columbia, Canada, V5T 3H7. Telephone: (604) 872-2250.

About Studio D

Not a Love Story was produced by Studio D of the NFB's English Production branch. Founded in 1974, the studio provides a forum for women filmmakers and their concerns. Although the studio includes male filmmakers as well, its main objective remains to bring a woman's perspective to social issues and to act as a catalyst for social change through the medium of film.

Not a Love Story represents a significant contribution to the work that the studio has done in the past six years. Many of the films made by the studio explore the position of women in society and the attitudes and relationships that exist between women and men. Pornography, because it perpetuates fantasies that both create and respond to cultural stereotypes, is an important and revealing aspect of this study.

Director
Bonnie Sherr Klein
With the participation of
Linda Lee Tracey
Associate Director and Editor
Anne Henderson
Producer
Dorothy Todd Hénaut
Associate Producer
Micheline Le Guillou
Camera
Pierre Letarte
Second Camera and Assistant
Susan Trow
Location Sound
Yves Gendron
Location Business Manager
Andrée Klein
Sound Editor
Jackie Newell
Assistant Picture & Sound Editor
Micheline Le Guillou
Research Assistance
Andrée Klein
Irene Angelico
Rose-Aimée Todd
Graphics Layout
Gayle Thomas
Animation Camera
Raymond Dumas
Original Music & Musical Director
Ginette Bellavance
Lyrics
Tina Horne
Vocalist
Cathy Miller
Music Recording
Louis Hone
Executive Producer
Kathleen Shannon

Produced and distributed by
National Film Board of Canada
(Studio D)

16 mm color
Screening Time: 68 min. 40 sec.

16 mm: 106C 0181 041
Videocassette: 116C 0181 041

National Film Board of Canada
Office national du film du Canada

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P.O. Box 6100, Montréal, Québec, H3C 3H5

Printed in Canada

National Film Board of Canada
Office national du film du Canada

No Life for a Woman

Produced by
Serendipity Films Ltd. for
National Film Board of Canada
Pacific Regional Production
Center

16 mm Color
Screening Time:
26 minutes 28 seconds

Distributed by
National Film Board of Canada

16 mm: 106C 0179 198
Videocassette: 116C 0179 198

This film points out the inadequacies of towns that have been built primarily around jobs and not around people. Women living in Mackenzie and Fraser Lake, B.C. give their views on life in these single-industry towns.

Little provision is made for organized activities outside the narrow framework of company jobs. Throughout the film, women, both employed and unemployed, discuss their lives in these towns built by the company to house workers. A nurse working at the local doctor's office comments on the high birth rate: having babies is one activity that the women find easy to pursue. Over-eating is another.

Steps are being taken to overcome the depression and isolation experienced by housewives living in these towns. One of the more effective tools of change was the creation of a women's center in Fraser Lake. Diana Ellis of the Northern Women's Task Force emphasizes the importance of such a center in bringing women out of their homes. Problems are being dealt with directly instead of lying buried behind four walls. The center provides a counselling and referral service, legal aid and a 24-hour crisis line.

A further catalyst for change is the Tuesday Morning Drop-In. It was organized to meet the social needs of women from Mackenzie and the area, many of whom remain indoors because of long winters and a lack of activities.

No Life for a Woman does offer hope for the future. It shows what steps are being taken to overcome the limitations of single-industry towns.

Directed and
Produced by
Bonnie Kreps

Edited by
Haida Paul

Camera:
Jack Long, C.S.C.

Sound:
Ingrid Cusiel

Original Score:
Richard Payne

Re-recording:
Barry P. Jones

National Film Board of Canada
Office national du film du Canada

Arthur Erickson

Produced by National Film Board of Canada
16mm color

Director & Photographer:
Jack Long
Producers: George Johnson
Jennifer Torrance

"Arthur Erickson is by far the greatest architect in Canada and may be the greatest on this continent."

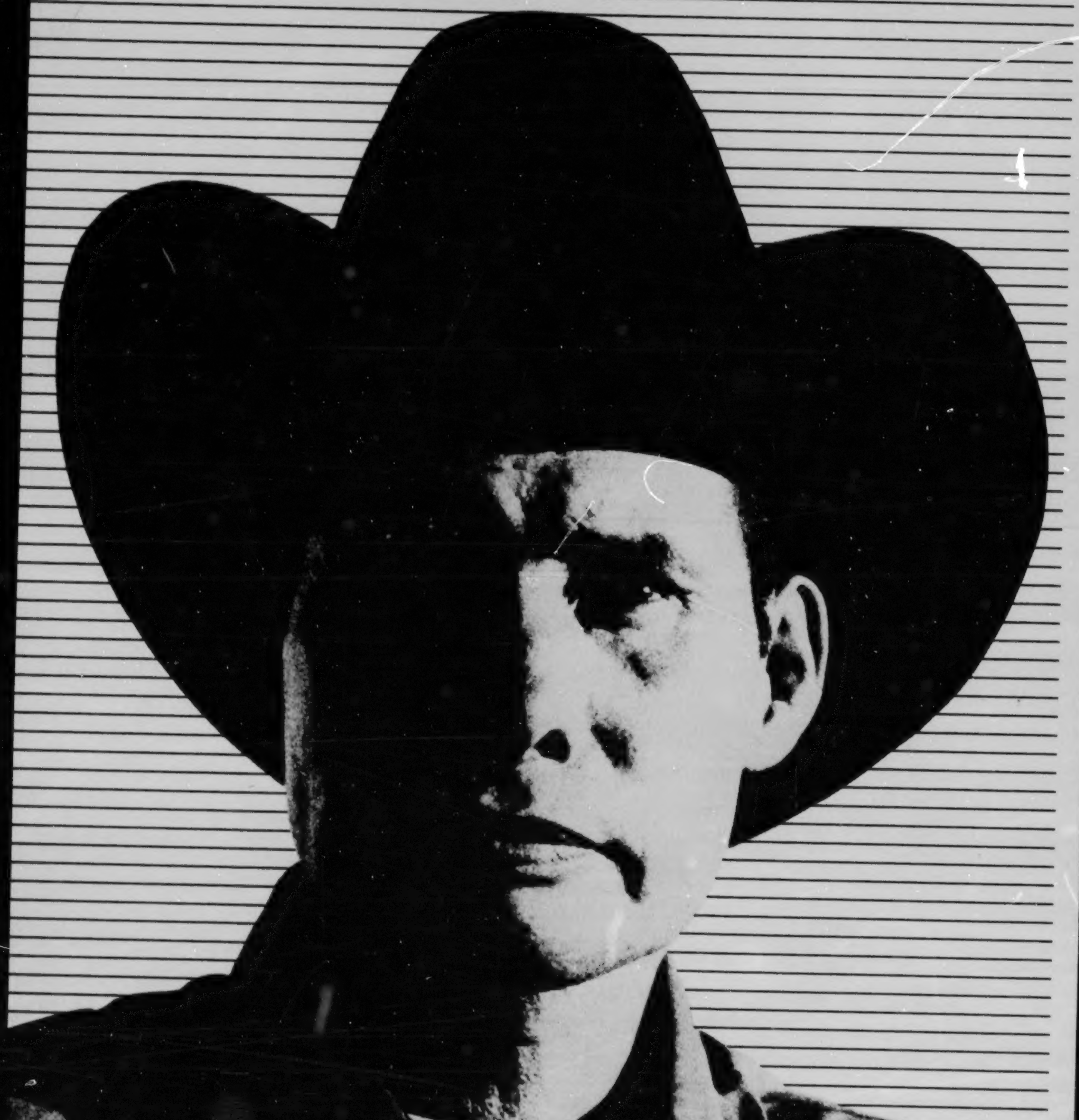
-- Phillip Johnson, dean of U.S. architects.

Arthur Erickson's Vancouver home--a converted garage--opens onto a garden, green and wild. A reflecting pool gathers the light while a mirror on the door brings the outdoors inside. Here, in an environment that reveals the man, Arthur Erickson talks easily about this art, the importance of interpreting the site and of achieving harmony between environment and structure, the inseparability of climate and site, and the cultural role of a building.

To Erickson, the architect's mission is to transform human aspirations into habitable space. Five of his projects are shown: the B. C. Museum of Anthropology, overlooking the Straits of Georgia; a residence; Simon Fraser University on Burnaby Mountain; Lethbridge University on the Albertan plain; and the monumental Robson Square which serves as a city center in downtown Vancouver. With each one, the architect explains how the design evolved and what he was trying to achieve.

Arthur Erickson is interested in the world, and the world is interested in Arthur Erickson. This film introduces the man, the architect, the humanist. Shot on location in Canada, Japan and Kuwait, the film moves quietly, like the man himself.

Standing Alone



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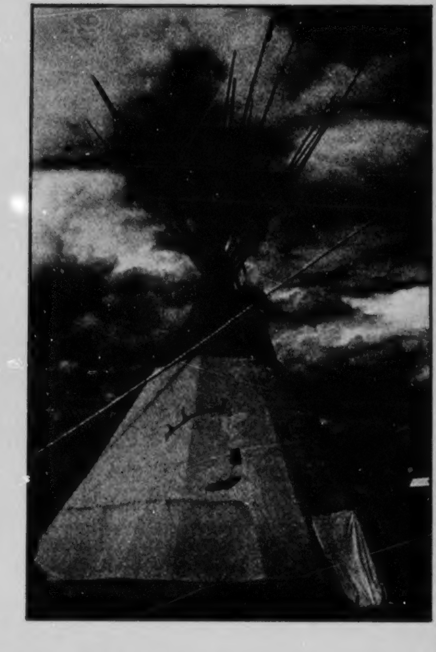


Standing Alone

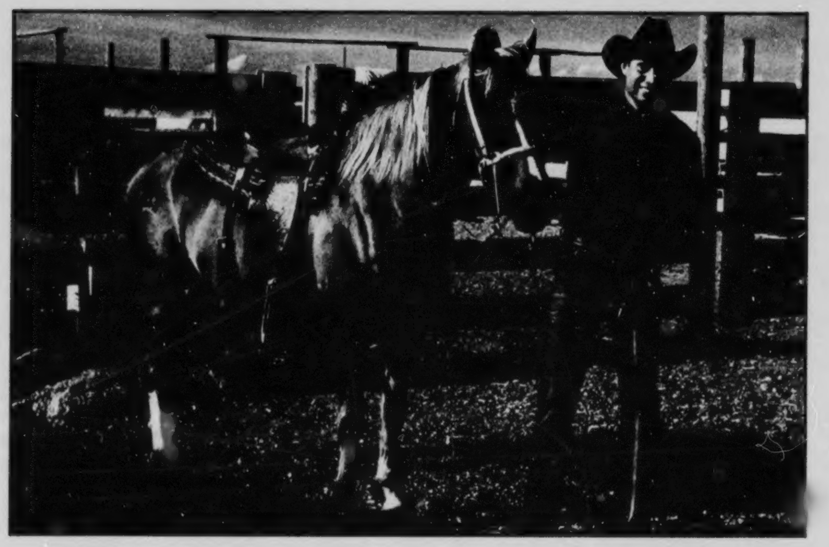
Pete Standing Alone is a Blood Indian caught between two worlds — the 19th-century horse culture of the Plains Indian and the energy politics of the 1980s. He passionately believes that it should be possible to have the best of both.

As a young man Pete was more a part of the white man's world — a rodeo rider, an oil rig roughneck, a spectator at Indian tribal ceremonies. The death of his parents, however, changed his thinking and he became more and more concerned with his roots. When he started to investigate the history of the Blood Indians, he discovered a culture that has probably been in existence for thousands of years. As his knowledge grew, so did his intense desire to pass on to the next generation the customs and traditions of his ancestors.

Standing Alone is a sensitive autobiographical study of a man's self-discovery. Photographed on the Blood Indian Reservation in southwestern Alberta, the film spans 25 years and vividly expresses the paradoxes and contradictions in Pete's life. He struggles to raise a family and a fine herd of horses, the symbol of achievement in the old culture. Although we see him teaching his sons how to break horses and hunt buffalo in the ancestral way, Pete knows they will probably never use these skills. He finds too that he is torn between being faithful to his Indian heritage and religion, and at the same time supporting his people through their transition into the industrial age.

Pete speaks of the difficulty of preserving the old ways when everything changes so quickly; he shares his hopes and his fears. In the end, though, it is his self-awareness, his curiosity, his courage and his independence that are his greatest achievements — his legacy.

Related films: ***Circle of the Sun***
A Pinto for the Prince



Direction
Colin Low
Production and Editing
Tom Daly
Project Organizer
John Spotton
Cinematography
Douglas Kiefer
Ernest McNabb
Camera Assistants
Ian Elkin
Rodney Gibbons
Simon Leblanc
Location Recording
Bev Davidson
Claude Hazanavicius
Sound Editing
John Knight
Original Music
Eldon Rathburn
Re-recording
Roger Lamoureux
Executive Producers
Barrie Howells
Michael Scott

Produced and distributed by
National Film Board of Canada

16 mm Color
Screening time:
Approximately 57 minutes
16 mm: 106C 0182 058
Videocassette: 116C 0182 058

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Printed in Canada

National
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The Last Days of Living

Produced by
National Film Board of Canada
with the help of a grant from the
Richard and Jean Ivey Fund,
London, Canada

16 mm Color
Screening Time:
57 minutes 52 seconds

Distributed by
National Film Board of Canada

16 mm: 106C 0180 002
Videocassette: 116C 0180 002

The Last Days of Living opens up a subject many of us find difficult to deal with, both in terms of our own mortality and that of others. It is a testimony to the fact that death can be met with dignity.

In 1975, Montreal's Royal Victoria Hospital initiated a revolutionary pilot project, the Palliative Care Unit for terminally ill patients. Under the direction of Dr. Balfour Mount and his dedicated staff, the Unit does not attempt to prolong the patient's life, but rather to provide highly personalized treatment that will make the last days of living as meaningful and as comfortable as possible.

In this film we share in the hardships and the joys experienced by the patients, their families and the staff of the Hospital Palliative Care Service. We also learn of the support and care available to patients who decide to spend their last days at home.

The film was made over a four-week period and does not present a select group of people chosen for their unusual fortitude. It is encouraging to see how ordinary people can attain courage and grace in facing the end of life.

For the patients the film is their legacy, a statement of their strength, determination and humor. It is an important film for health-care professionals and volunteers who work with the terminally ill, and for us all.

Research, Direction and Editing:
Malca Gillson

Photography:
Robert Humble
Barry Perles

Location Sound:
Bev Davidson
Michael Hazel

Re-recording:
Hans Peter Strobl

Producer:
Tom Daly

Executive Producers:
Arthur Hammond
Barrie Howells

National Film Board of Canada
Office national du film du Canada

Jacks or Better

Produced by National Film Board of Canada.
16 mm film color

Producer: Ray Hall
Director: David Geddes

Description: For a hundred years or more, majestic stands of fir and cedar have succumbed to the saw in the pursuit of wages and the creation of a way of life. The logging industry endures, still dependent in this age of mechanization, on the wit and wiles of the catskinner, the loaderman, the chokerman and the faller.

Not always an endearing figure, the faller is of a special breed: unknown, alone, apart. Through the deep quiet beneath the canopy of a Northwest Coast rain forest, a solitary faller surveys the stand, selects a single tree and leans back in an attempt to judge the height and angle. An almost fragile-looking saw bites into old wood. With precision and care, the behemoth falls, as straight as a giant, well-aimed arrow.

The film, originally inspired by an artist's visits to a logging camp, and which incorporates some of her paintings, leaves you almost with a sense of melancholy brought about by the conflict of human and natural forces.

More than a portrait, JACKS OR BETTER is a unique encounter, at once lyrical and strong, harsh and yet realistically sympathetic towards the individual. It offers you an intimate view, through delicately frosted glass, of a lifestyle you may never again experience on such a personal level.

Tiers: A Story of the Penitentiary

Produced by National Film Board of Canada.
16mm film color 18 minutes and 30 seconds

Director: Charles Wilhenson

Description: A look at one of British Columbia's most talked about penal institutions, now closed. Imaginative cinematography underlaid with comments from previous prison officials and inmates, and comments from the general public give an evocative portrait of this institution's history--its hopes, achievements and failures.

ZEA

an explosion of the familiar . . .
enigmatic . . . intriguing

Directed by Andre Leduc and Jean-Jacques Leduc
Produced by the National Film Board of Canada

National Film Board of Canada
Office national du film du Canada

ZEA

It can't be done, they said. A technical absurdity! Making this film required the concerted expertise of scientists, laboratory technicians and an inspired cameraman. Together they had to find solutions to exacting problems. *Zea,* potentially explosive, demanded to be treated with special attention.

First, the camera had to be speeded up from 24 frames a second to 5,000. At this speed a source of light 70 times stronger than sunlight is required for the high-speed film stock to register the image. To achieve such brilliance without igniting the subject, the film crew used a series of condensers that followed the movement of the sun.

The next problem was to predict the precise moment at which *zea* would explode. Microwaves, lasers, thermocouples and a keen sense of smell were called into play. The subject allowed only two or three seconds for composition, focus, stop down and shoot — all this with three people jammed into a tiny space, facing the hazard of hot oil.

Zea... comedy or science? From outer space or across the counter? Humor and vision have conspired to produce a film that transforms the commonplace into magic. A superb visual trick that fires the imagination!

Winner of the Special Jury Award,
Short Film category, 1981 Cannes Film Festival.

Directors: André Leduc/Jean-Jacques Leduc

Editing: Werner Nold

Cinematography: Eric Chamberlain

Music: Fantasia on a Theme by Thomas Tallis
by Ralph Vaughan Williams played by The Academy of St. Martin-In-The-Fields
Direction: Neville Marriner
Faber Music Ltd.
Decca Record
Argo ZRG 696

Producer: Robert Forget

Produced by
National Film Board of Canada

16 mm and 35 mm Color
Screening Time: 5 minutes 17 seconds

16 mm: 106C 0081 022
35 mm: 105C 0081 022
Videocassette: 116C 0081 022

Distributed by
National Film Board of Canada

National Film Board of Canada **Office national du film du Canada**

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Printed in Canada

LONELY BOY

"I'm just a lonely boy
Lonely and blue
I'm all alone
With nothing to do . . ."

Shrieks of adulation swell up like a tidal wave from a sea of young, tear-stained faces below, engulfing singer and song . . .

"I've got everything you can think of
But all I want is someone to love."

The response borders on hysteria. Burly cops glance nervously around, and Anka staff backstage stand at the ready.

Paul Anka—teen-age idol—what is there about this young Canadian song writer and singer to explain his meteoric rise to fame?

> "He's so nice, I love him, he's so wonderful, he's so sweet," chant his teen-age admirers.
>
> Says his personal manager, "Paul's features are excellent, his eyes are great, he has a great mouth . . . God gave (him) something I don't think is given to anyone in the last 500 years . . ."
>
> Says the owner of the famous Copacabana night club, "He has a terrific personality. The public just takes to him. They like him . . ."
>
> Says Paul Anka, "On the subject of girls, you ask me about the reaction. Well, I'll tell you, this business that I'm in, I would say sixty per cent of it is on emotion and a word which we all know and I'm not in accord to using, but it's the only word which can sum up . . ."

Here is a candid look, from both sides of the footlights, at a modern-day phenomenon—a singer held at the crest of popularity by some vicarious current, filling a vacuum to baffle all but the sociologist.

For Anka fan, or critic, *Lonely Boy* will prove a film of intense interest—entertaining in itself, revealing in what it shows you of the evangelism of adolescent love.

16mm ***Black & White*** ***Running Time: 27 minutes***

Direction: Wolf Koenig and Roman Kroitor.
Editing: John Spotton and Guy L. Côté.

Production: Roman Kroitor.
Executive Producer: Tom Daly.

Produced by THE NATIONAL FILM BOARD OF CANADA

1962

PRINTED IN CANADA

National Film Board of Canada
Office national du film du Canada

Paul Tomkowicz
Street-Railway Switchman

Produced by National Film Board of Canada,
1953. "Faces of Canada Series"
16mm & 35mm Black and White Sound
Running Time: 10 minutes

Producer: Tom Daly
Director: Roman Kroitor

Summary: In winter the rail-switches on streetcar tracks in Canadian cities become jammed with freezing mud and snow. Keeping them clean, whatever the weather, is the job of the switchman--one of the unsung, unnoticed men who keep a community running. In this film Paul Tomkowicz, Polish-born Canadian, talks about his work and the retirement he is contemplating after twenty-three years on the job in Winnipeg. This is a picture of an old man one might see at work on any city street. People pass him by without a second glance, taking him as much for granted as the vehicles on which they ride. In the film, however, he becomes poignantly real as he goes about his task, reminiscing to himself in broken English, expressing the hopes and concerns of all humanity and of one who accepts his lot without complaint, considering himself fortunate that it is not worse. Paul Tomkowicz's needs are simple, his wants are few. Let the trolley buses replace streetcars and do away with the work of a switchman. . . next year he will be sixty-five and able to retire. In the meantime his work is not too hard for an old man.

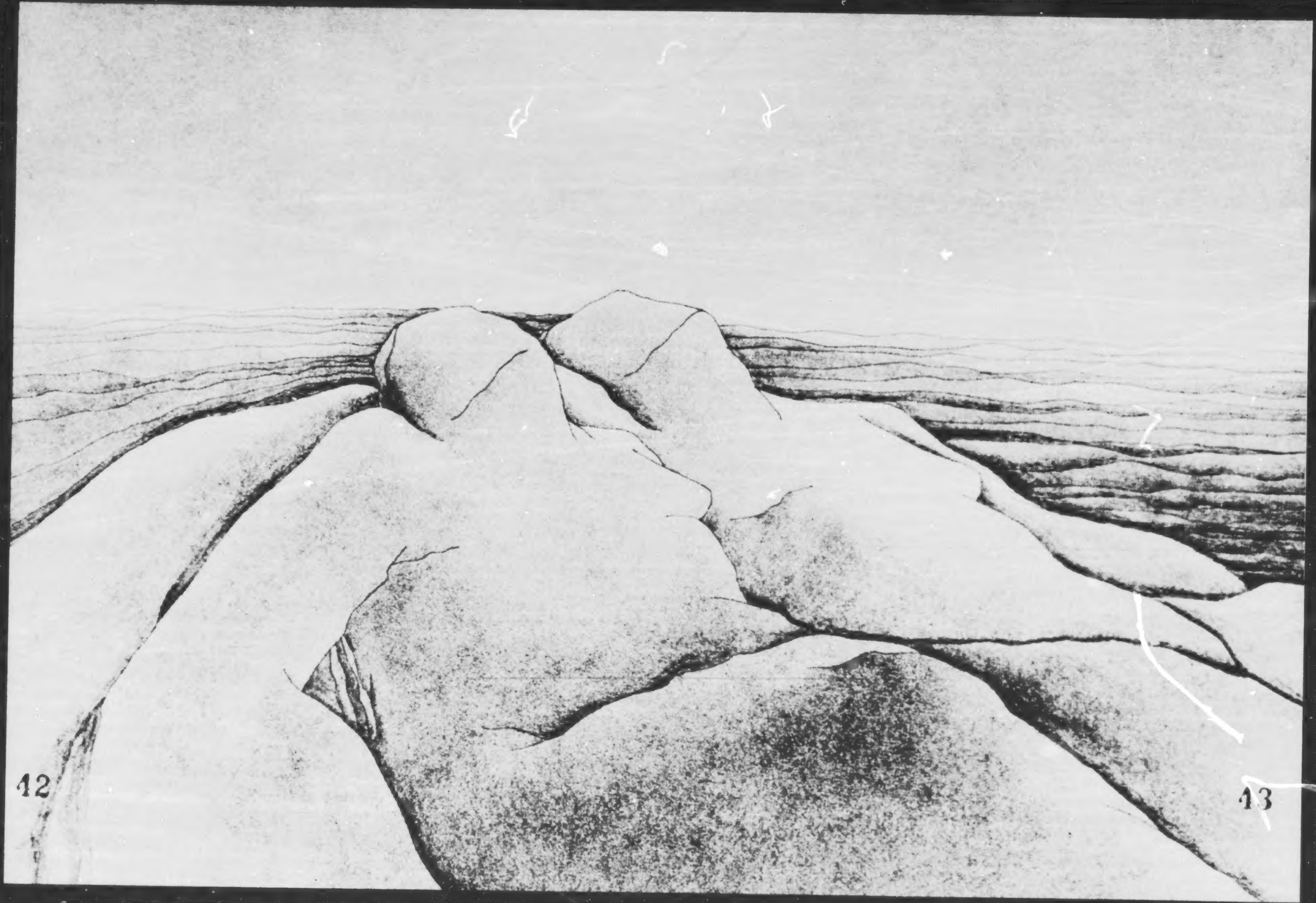
Suggested Uses: For any audience except very young children. Especially useful to groups interested in citizenship, immigration, or the experiences of new Canadians.

Jeu De Coudes (Elbow Game)

Produced by Societe Radio-Canada
16mm film color 6 minutes 45 seconds

Director: Paul Driessen

Description: Paul Driessen's unique animation depicts the daily struggle to survive in a world where one is continually being elbowed into conformity by the less accepting and inventive. It takes wits to keep oneself from being pushed off the cliff.



Beginnings

A Posthumous Film by
Clorinda Warny

National Film Board
Office national du film

Beginnings

This film describes the highly personal universe of the animator. Spawned by an eclectic imagination, this universe draws on historical, literary and classical sources to illustrate man's close ties with nature.

Abstract landscapes give birth to strange godlike figures who fuse back into the landscape in a series of slow, dreamy dissolves. Simple line drawings explode with colors that dictate their own cadence of change. A measured, undulating rhythm enhances the underlying sensuality of the images that evoke life before man, the emergence of the god/man, passion, maternity and birth.

The music is wedded to the visuals in a subtle and effective symbiosis where the one is heightened by the other. The various instruments mark changes in the slow evolution of the film.

Beginnings delves into the unconscious, from which it conjures up visions of surrealistic beauty. The images flow into one another in a glorious celebration of love and life.

The sudden death of the filmmaker during production nearly put an end to the film. It took two years and the unselfish efforts of two fellow-animators at the NFB to complete it. *Beginnings* then went on to the 1980 International Animation Film Festival, held in Ottawa, where it won the Special Jury Prize.

A Posthumous Film by:
Clorinda Warny

Completed by:
Lina Gagnon, Suzanne Gervais

Music: Denis Larochelle

Camera: Pierre Landry

Editing: Jacques Drouin

Recording: Roger Lamoureux

Re-recording: Hans Peter Strobl

Production: Gaston Sarault

Produced and Distributed by
National Film Board of Canada

16 mm 35 mm Color
Screening Time:
8 minutes 48 seconds

16 mm: 106C 0080 031
35 mm: 105C 0080 031
Videocassette: 116C 0080 031

National Film Board of Canada,
P.O. Box 6100, Montréal, Québec. H3C 3H5

Printed in Canada

Distant Islands

A child's summers spent sailing amongst the Gulf Islands off the British Columbia coast are fondly remembered in this lyrical short film. *Distant Islands* features a series of bright tapestries that evoke memories of a young girl's vacations aboard the family sailboat.

Using a combination of embroidery, appliqué, patchwork and frame-by-frame photography, the filmmaker's needle weaves in and out, drawing with colored silks and yarns the dark skies that herald a summer storm, the white-capped waves of a rolling sea, the radiance of an evening sunset. Stitch by stitch recollections of leisurely days at sea fill her canvas. The highlight of her story is the discovery of a mysterious abandoned cottage, which in her imagination magically comes to life.

As in her award-winning production *The Hometown*, the artist has used the technique of sewing a section at a time, then recording on a camera the progress of the work. What evolves are images that sway and dissolve into one another, faces that appear, then fade away, a tiny mouse scurrying across a room.

For most people, the pleasures of holidaying are preserved and remembered through old snapshots, postcards and souvenirs. In *Distant Islands* the filmmaker has chosen her particular form of art as a unique means of sharing with her audience some of her happiest childhood moments.

Directed
and animated by
Bettina Maylone
Editor
George Johnson
Narration written by
Mike Poole
Narration read by
Nettie Wild
Music composed
and performed by
Ken Hemmerick
Technical assistance
Svend-Erik Eriksen
Jack Long
Producer
Jack Long
Executive producer
George Johnson

Produced and distributed by
National Film Board of Canada
Pacific Regional Production Centre
Color
Screening time:
6 minutes 8 seconds
35 mm: 105C 0181 052
16 mm: 106C 0181 052
Videocassette: 116C 0181 052

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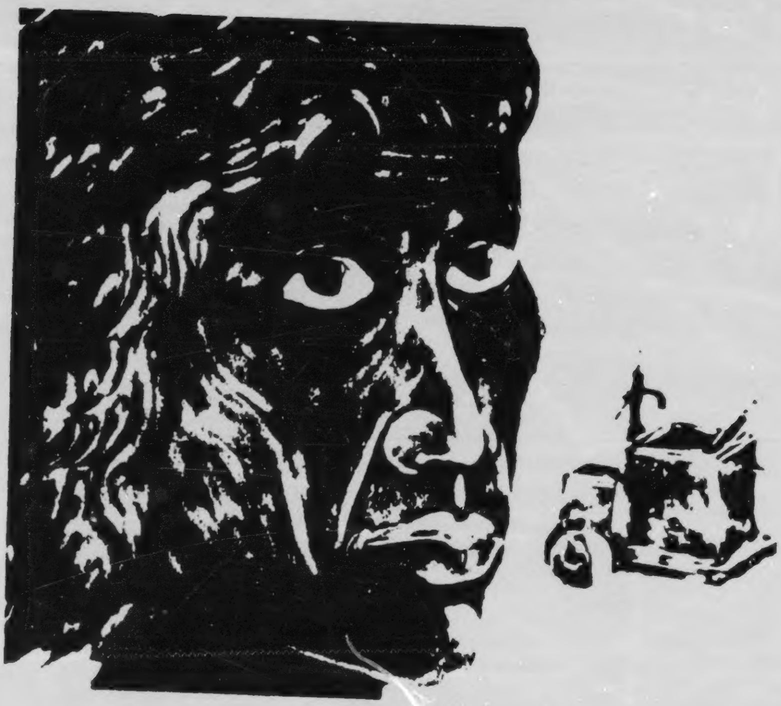
TOP PRIORITY

Directed by Ishu Patel
Produced by the National Film Board of Canada



Surface-to-surface missiles don't quench thirst. They don't irrigate the land, and they can't wash clothes. Yet in the imaginary country of this animated film, missiles are a top priority. This film, based on a short story by Enver Carim, could be about any country.

In a stark landscape burned by desert winds, a family awaits the arrival of a truck. Every waking hour is geared to the imagined stroke of a motor. The cattle are dying off; the water hole is almost dry. Months ago they sold their few precious belongings to pay for irrigation equipment. They are still awaiting delivery from the district co-operative branch. One day, a cloud of dust appears on the horizon. Hope breaks through their desperation. But the cloud of dust heralds the arrival of equipment of another sort.

Top Priority deals basically with how needs fail to be met. The symbols are interchangeable. In this film they happen to be water and missiles. These needs can be spiritual, emotional, or material. They can be the needs of one person relative to another, or a family, or an institution.

Life is a long struggle to satisfy these many and various needs. In **Top Priority,** the filmmaker has chosen a theme that is sending shock waves throughout the world. Nuclear armaments are piling up. The threat of war hangs like an angry cloud. Man's basic needs are being swallowed up in the huge sums of money earmarked for war.

Notes on the Animation Technique

The technique used by animator Ishu Patel is one he discovered by accident. Plasticine is applied to the glass surface of a light box. An animation camera is positioned above. Each image is carved into the plasticine with a variety of tools to vary texture and edges. When shooting starts, the room is in total darkness except for the light inside the box shining through the multicolored plasticine. The effect is brilliant, luminous and startling.

Suggested audiences:

- **General public**
- **Education — Secondary schools, Universities**
- **Development Education Programming**
- **Film Animation courses**

Design, Animation, Direction
Ishu Patel

Music and Sound Track
Normand Roger

Recording
Louis Hone

Re-recording
Hans Peter Strobl

Producer
Ishu Patel

Executive Producer
Derek Lamb

Produced and distributed by
National Film Board of Canada

35 mm Color
Screening Time: 9 minutes 9 seconds

35 mm: 105C 0181 065
16 mm: 106C 0181 065
Videocassette: 116C 0181 065

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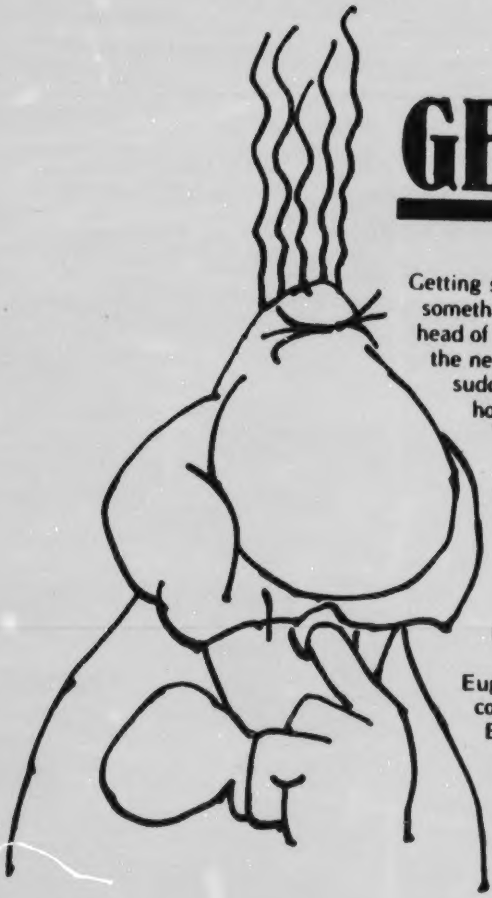
Office national du film du Canada

Getting Started

Produced by National Film Board of Canada.
16mm and 35mm film color
3/4" videocassette color
Screening time: 12 minutes 23 seconds
Running length: 136 metres

Story, Direction, Animation:
Richard Condie
Producer: Jerry Krepakevich



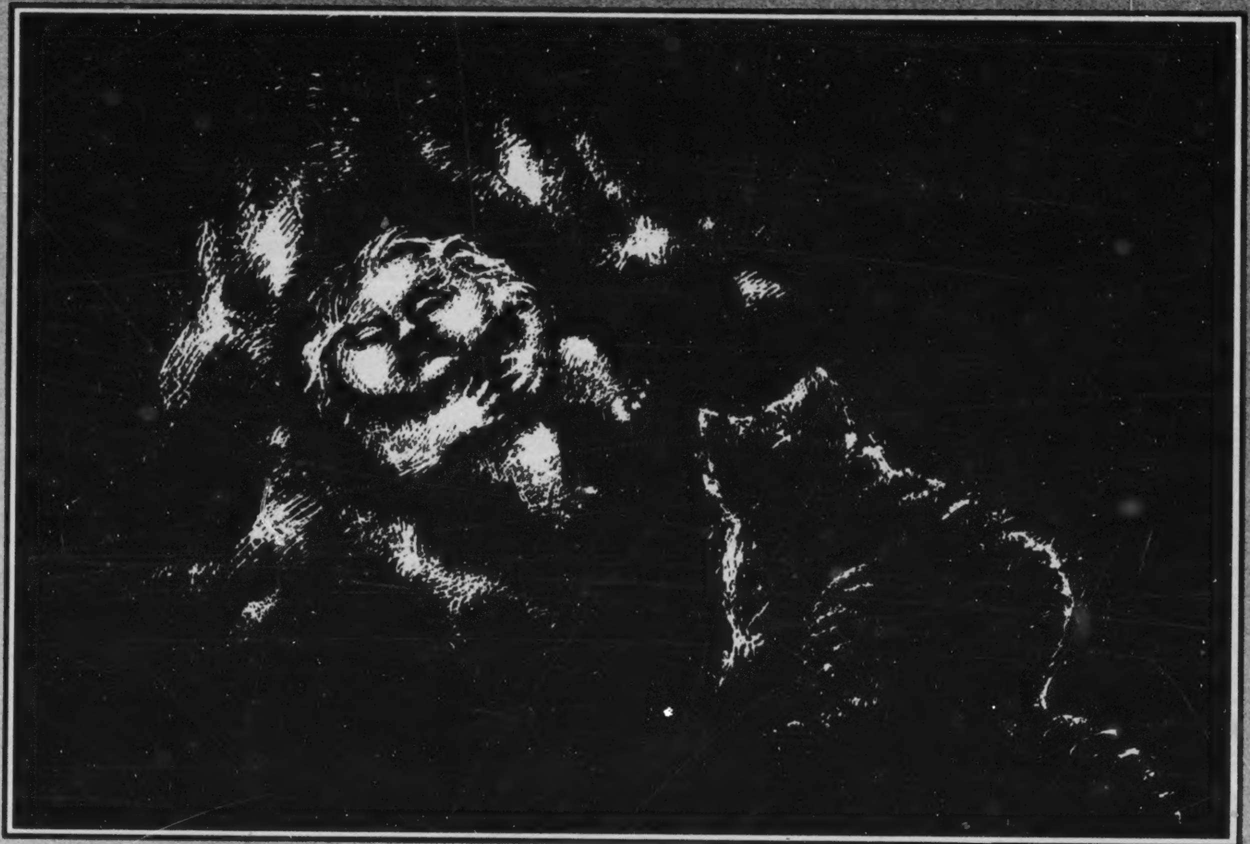
GETTING STARTED

Getting started on a job can be the toughest thing in the world. If it's something we don't want to do, we procrastinate. If we can't clear our head of a million other thoughts, we zip from one unrelated activity to the next. We are never more creative - we re-arrange the room, we suddenly remember pressing appointments, we earn ourselves honorary doctorates in the fine art of goofing-off.

Our hero, Eugene, is a concert pianist who has just two days in which to rehearse for a recital. At this game of self-distraction he has no peer. Eugene uses the Environmentalist approach: any and everything around him becomes a diversionary prop - a drinking glass, household appliances, a T.V. set. He has the attention span of a fruit fly. He flits from one amusement to another while the clock relentlessly ticks away the minutes, pushing him ever closer to concert time.

Eugene's roommate David, on the other hand, has no trouble concentrating. Not only can he start a job, he can finish it. Can Eugene learn from his example? Will the clock ever stop ticking? Will he discover who ordered the cheese?

This is a film everyone can identify with. While you thrill to Eugene's Bogart impressions and agonize with his herculean struggle to get started, you'll be nudging your neighbor saying "I do that . . . that's me!"



LUNA
LUNA
LUNA

A child sleepwalks into the forest. A black vastness inhabited by night creatures throbs and chirps, croaks and gurgles. A cat's eyes flash and then fade. Minute explosions of light tear holes in the fabric of the night. The child is spellbound. The air is alive with magic.

As she wades deeper into the shimmering night, the real forest and the imaginary one dissolve into each other. Apparitions and phantoms begin their nocturnal dance. The atmosphere becomes charged with "things that go bump in the night that are likely to give one a fright." Suddenly, the magic turns black and witches come shrieking to life. When the fear of the night reaches its peak, the moon rises, the dark spell is broken and the final lunacy begins.

The animation technique used in this film is innovative. Black acetates were scratched directly under the camera to create images with the quality of finely detailed etchings. A complex sound track of musical instruments, synthesizer and animal sounds wraps the audience in three-dimensional sound.

Luna Luna Luna, a hypnotic film that leaves its audience moon-struck.

A film without words

Suggested audiences:
General public
Film Animation classes
Child Psychology classes

A film by
Viviane Elnécavé

Sound track and music
Normand Roger

Editing
Jacques Drouin

'Shibi'-Abenakis song by
Alanis Obomsawin

Sound effects
Ken Page

Recording
Louis Hone

Re-recording
Hans Peter Strobl

Producer
Francine Desbiens

Produced and distributed by
National Film Board of Canada

16 mm Color
Screening Time: 12 minutes 33 seconds

16 mm: 106C 0081 025
35 mm: 105C 0081 025
Videocassette: 116C 0081 025

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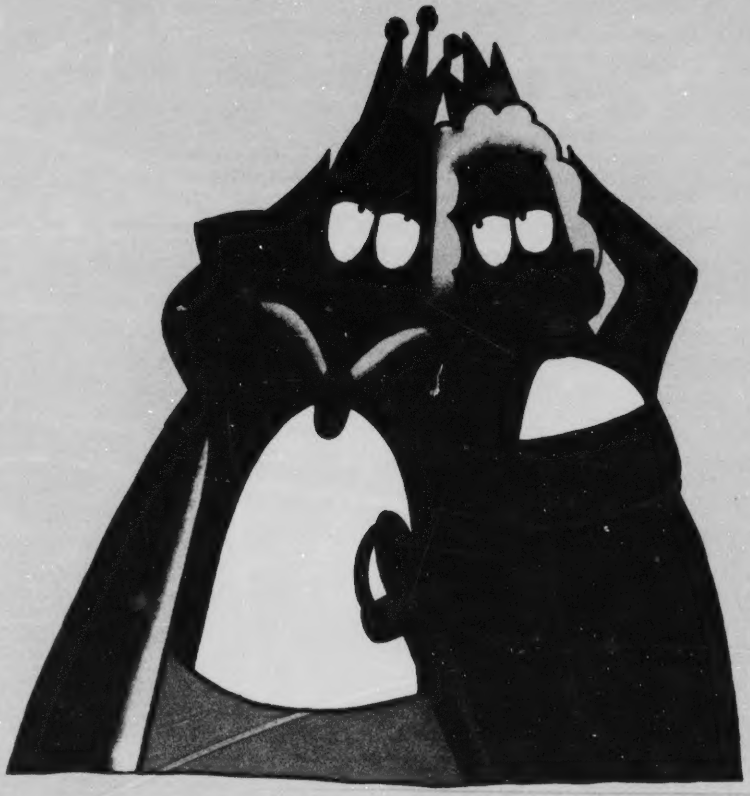
Office national du film du Canada

UC49

The Tender Tale of Cinderella Penguin



The Tender Tale of Cinderella Penguin, starring a mistreated, romantic penguin and a supporting cast of rotund look-alikes, is the well-known tale… with a preposterous twist.

In this whimsical variation, Cinderella loses her glass flipper but wins Prince Charming. A kingdom-wide search uncovers the right webbed foot, true love prevails and the nasty stepsisters …well, you know how the story goes…

An animated film without words, the images and music are synchronized to create a zany penguin ballet.

Directed and produced by
Janet Perlman
Color rendering
Françoise Hartmann
Zina Heczko
Eunice Macaulay
Animation camera
Pierre Landry
Raymond Dumas
Jacques Avoine
Sound concept
Normand Roger
Janet Perlman
Post-sync effects
Ken Page, C.F.E.
Sound editing
Normand Roger
André Galbrand
Re-recording
Hans Peter Strobl
Executive producer
Derek Lamb

Produced and distributed by
National Film Board of Canada

16 mm and 35 mm Color
Screening Time:
9 minutes 57 seconds

16 mm: 106C 0181 011
35 mm: 105C 0181 011
Videocassette: 116C 0181 011

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du Canada

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P.O. Box 6100, Montréal, Québec H3C 3H5
Printed in Canada

the same old story

A man sits reading a book. His body is earthbound, but his mind has taken flight in a fantasy. Suddenly, the doorbell rings. Reality snaps him out of his romantic dream. He walks to the door, opens it and finds himself in a situation which is the exact re-enactment of the novel he has just read. His wife's voice calls out from the kitchen. At that instant, the man's behavior shifts. The consequences of his non-involvement are tragic.

A deceptively simple film, **The Same Old Story** is over almost before it has begun. A story within a story within a story, its effect is jarring, ambiguous and lingering. Questions crowd the mind. Why did the protagonist choose to alter his actions? Was the real-life situation too similar to his dream? Did he feel threatened by his wife's presence? The questions could broaden out into a more general context. How does a close interpersonal relationship affect one's behavior? How does fear affect one's life, and spill over into other lives? What is freedom of action?

The title is misleading. Fear is as old as humanity, and as new as today. Under the guise of an innocent little film, the animator has exposed a reality which touches many of us.

Suggested audiences:

Psychology classes
Sociology classes
Film animation classes
General public

A film by	**Paul Driessen**
Assisted by	**Bernard Landry**
Camera	**Pierre Landry**
Pixilation	**Co Hoedeman**
Sound	**Normand Roger**
Recording	**Louis Hone**
Voices	**Serge Thériault**
Re-recording	**Hans Peter Strobl**
Administration	**Jacqueline Marquis**
Producer	**Gaston Sarault**

Produced and distributed by
National Film Board of Canada

16 mm Color
Screening Time:
3 minutes 12 seconds

16 mm: 106C 0181 029
35 mm: 105C 0181 029
Videocassette: 116C 0181 029

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film celebrating a unique event in anadian dance history… 8 com- anies together on stage for the first ime.

Un film qui fait revivre un événement unique dans l'histoire de la danse au Canada… 8 troupes réunies pour la première fois.

ANNA WYMAN DANCE THEATRE / DANNY GROSSMAN ~~DANCE~~ COMPANY / LES GRANDS BALLETS CANADIENS / LE GROUPE DE LA PLACE ROYALE / THE NATIONAL BALLET OF CANADA / THE ROYAL WINNIPEG BALLET / TORONTO DANCE THEATRE / WINNIPEG'S CONTEMPORARY DANCERS

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GALA

A dancer in rehearsal plunks down on mid-stage. She removes a slipper and bangs it against the floor. The toe needs softening. She is oblivious to the camera crew. Dance is her priority.

Gala is a film about this dancer, and 94 others.

May, 1981... For the first time, at the National Arts Centre in Ottawa, eight of the country's leading companies gather to perform on a single stage. They come from Vancouver, Winnipeg, Toronto, Ottawa and Montreal. The event, billed as the Canadian Dance Spectacular, offers a rich program of classical and jazz ballet, modern dance, gymnastics, pantomime and theater. Seen in close-up are such outstanding artists as Veronica Tennant, Evelyn Hart, Zane Wilson and David La Hay.

But *Gala* records more than the performance itself.

The men and women who dance so effortlessly are searched out in dressingrooms and corridors. The camera catches pre-performance jitters and post-performance elation. In the wings, dancers watch dancers and are struck by the magic of the art they share. Out front, an adoring public applauds; backstage, the artists collapse, sweat-drenched and breathless.

Gala captures a country's exciting cultural heritage and celebrates a unique moment in the history of Canadian dance.

Le 30 mai 1981 - Centre national des Arts à Ottawa... Venues de Vancouver, Winnipeg, Toronto, Ottawa et Montréal, huit des plus grandes compagnies de danse du pays avaient rendez-vous ce soir-là sur le même plateau.

« Le Canada danse », spectacle présenté par l'Association canadienne des organisations professionnelles de la danse en collaboration avec le Centre national des Arts, réunissait les plus grands noms dans le domaine de la danse au Canada.

Le film *Gala* témoigne avec éloquence de cette inoubliable soirée et nous offre un heureux mélange de danse classique, ballet jazz, danse moderne, gymnastique rythmique, pantomime et théâtre.

Cinq caméras soigneusement mises en place dans la salle ou sur la scène captent de façon magistrale des images qui soulignent la maîtrise des danseurs, l'harmonie des mouvements et s'insinuent même derrière la scène où les danseurs, envahis d'un trac fou, observent leurs confrères en action.

Des chorégraphies originales, d'une beauté incomparable, représentant le mystère, le jeu, la passion composent un spectacle éblouissant qui traduit les innombrables possibilités d'un art qui se libère et innove. *Gala*, un délice pour les yeux où la danse, au nom de la perfection, est portée au maximum de la beauté et de l'émotion.

FT

Director of photography / Directeur de la photographie :
Savas Kalogeras

Camera (Performance / Spectacle) Caméra :
Susan Trow, Tony Ianzelo, Roger Rochat, Barry Perles, Roger Moride

Backstage directed by / En coulisses, réalisation :
Cynthia Scott

Camera / Caméra :
Paul Cowan, Andreas Poulsson

Post production sound supervisor and mixer / Superviseur du son en post-production et mixeur :
Hans Peter Strobl

Location recording / Preneur de son en location :
Claude Hazanavicius

Sound editor / Monteur du son :
André Galbrand

Produced, directed and edited by / Production, réalisation et montage :
John N. Smith, Michael McKennirey

Executive producer / Direction générale :
Adam Symansky

Produced and distributed by
National Film Board of Canada

Color
Screening time: 90 minutes

35 mm: 105C 0382 021
16 mm: 106C 0382 021
Videocassette: 116 0382 021

Une production et une distribution de
l'Office national du film du Canada

Couleurs
Durée : 90 minutes

35 mm : 105C 0382 021
16 mm : 106C 0382 021
Vidéocassette : 116C 0382 021

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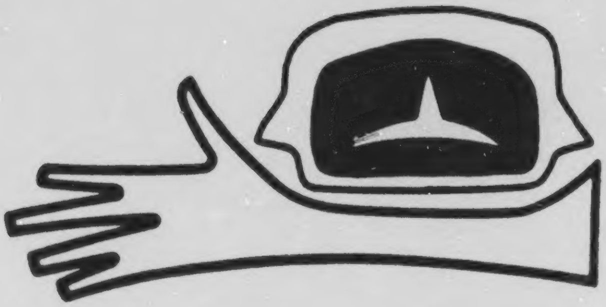


VISUALIZATION IN A SOCIAL CONTEXT

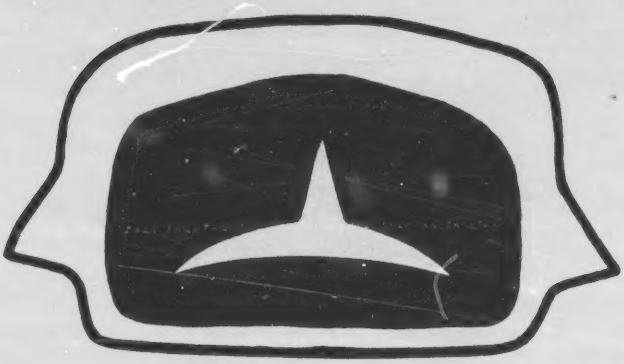
Visualization in a social context suggests all sorts of things which exceed the scope of the papers in this section. The range is wide, however, touching upon topics as diverse as the humanism of Marshall McLuhan, the politics of a Rubik's Cube, the gender issues of gestures, and visual literacy in the helping therapies.

Culkin, in one of the four keynote addresses of the conference, reminisced about his long and close association with McLuhan. He has provided here a brief but charming excerpt from that speech. Mills gave such a well received dynamic representation of sexual differences in body language that she was persuaded to repeat the performance. Her paper focuses upon male-female differences in nonverbal behavior and upon the social implications that these differences conjure.

Two art related papers by Maxham and Brizee speak to the cultural facet of our social context. Maxham describes a transformation model for visual literacy. Brizee's view is almost anthropological as she discusses the communicative symbology of Plains Indian art.

Sullivan seems to suggest that the way we see things is influenced by the symbology we attach to what has been seen. Her paper transforms the Rubik's Cube from a somewhat trivial three-dimensional puzzle into a compelling example of symbolic interpretation.

The last half of this section comes from a series of "phototherapy" workshops and presentations. These papers are linked by a common interest in the use of visuals and visual literacy skills in the helping professions. Jacobs recounts personal experiences using visual therapies in the treatment of chemically dependent adolescents. An examination of how hearing impaired infants learn to communicate using American Sign Language is provided by Bullard. Entin explains how, by adapting the concepts of family systems theory, family photo albums are useful in psychotherapy. Nath describes techniques involving the literal, inferential, and associational uses of photographs to teach mentally handicapped students. Weaver postulates the five stages of photography as a metaphor for learning. Her metaphor applies as a prescription for students with learning problems and as a creativity model.



The design on the cover is eclectic and symbolic. The logo of IVLA is an eye-hand symbol. In recognition of the conference site at Vancouver and in general tribute to the enthusiastic Canadian support of the 14th annual IVLA conference, the traditional eye was transformed into a Kwakiutl eye. Yes, that's Kwakiutl, an Indian tribe from the Queen Charlotte area on the Canadian Pacific coast, and we are referring to their ancient totem design which depicts the eye as the symbol of the universe. The outstretched IVLA hand is meant to extend the symbolism. For the full symbolic treatment you might like to refer back to the title page.

UNDERSTANDING MEDIA—AFTER McLUHAN

by

JOHN CULKIN
Centre for Understanding Media, Inc.
New York, New York

A year ago I was asked to speak at Marshall McLuhan's funeral, and my words at that time accurately express my feelings for the man and for his work.

> I remember one time in the Fordham days when Ted Carpenter and I had been away at a conference, coming back to Fordham rather enthusiastically, and Marshall asked his regular two questions: "John, did you hear any new jokes," and "John, did you learn anything?" And the jokes were always important, as you know, because Marshall knew that we spell manslaughter and man's laughter the same way and that it depends on where we choose to put the emphasis. His humor was not icing added to his thoughts; his humor was integral to it. It was a special form of courtesy to allow those who wanted to maintain their seriousness to stay there and those who would be easily distracted to have an easy way not to pay attention.
>
> But I think often of his question, "Did you learn anything?" I know myself that you tend as you go along to get your box and you want to get things within that box tidy. You want to get them all in order and you make small changes, large changes, but always within that box. Marshall was one who questioned whether the box itself was adequate to life. He always said, "Nothing is inevitable if we are willing to understand." And so the comfortable way of rearranging small things in small boxes was not given to him. He chose a more dangerous way and, in an incredibly artistic performance, in a world that would have been more comfortable with scientists dealing with these truths, he teased and cajoled, and tempted and invited, and tried to persuade us to join him in the pursuit. And it was a pursuit that mattered. He was in the company of those who did work that made a difference. The work is not finished; and there are many in our number today who will be part of bringing it to completion. But the years teach what the days could never know. In many ways his work has not been read for the first time. It is still remaining to be read, to be understood, to be incorporated.

McLuhan's work is not meant to be accepted *in toto* or rejected *in toto*. His public utterances were those of a man at work on finding answers, not those of one who is providing answers. There were, of course, answers aplenty, but the main thrust of the endeavor was the process of probing and exploring. His real contribution to the field of communications was to call attention to the field itself, to locate it within the tradition of humanistic studies and to help define its boundaries. Through an almost ubiquitous presence in print, in person, and in all media forms, he informed, cajoled, and challenged the worlds of scholarship, business, technology, and the arts to pay attention to the unique forms and effects of the new media. He refused to follow the example of those intellectuals who feared the new technologies and who relegated them to peripheral roles in the academy. He understood that no culture could be much better than its mass media.

In the course of working with Marshall I coined three words which helped me to order his insights and theories.

1. Whom-ese. Japanese, Chinese and Portugese are languages. So is Whom-ese. It is the language of the Whom in the "Who-says-What-to-Whom" model of communication. It is the language of all effective communication because it is couched in terms and emotions which respect and suit the hopes, fears, and understanding of the receiver of the communication. Understanding media is understanding me. McLuhan was often falsely characterized as some kind of uncritical fan of the new media. Hardly. He could have lived comfortably with his books and his music. His focus was on the effect of the media on people. Focus, incidentally, is a word which Marshall and I enjoyed a great deal. It is the Latin word for hearth and Marshall, who loved his fireplace, often referred to television as an "electronic hearth." Also within the word itself in straight-ahead, left-to-right order are the words "hear, ear, earth, art and heart." His three major books reflect this concern in their subtitles.

The Mechanical Bride--Folklore of Mechanical Man
The Gutenberg Galaxy--The Making of Typographic Man
Understanding Media--The Extensions of Man

He was the humanist of the new technological world.

2. POB. POB is an acronym for Print-Oriented Bastard. (Marshall preferred "person of the book.") A POB is not just one who likes books: he is one who detests and distrusts any medium other than print. Such people, of course, are in the long run the ones who do most harm to the printed word itself because of their narrowness and their refusal to speak Whom-ese. The French handled the phrase rather nicely by translating it as "textomaniaque." McLuhan was above all a book person, but he understood the necessity of dealing with all the forms of human communication. In trying to tell people that the book wasn't everything, he was accused of saying that the book was nothing. He was trying to save the book by locating it within the context of the emerging technological culture. His words have never seemed more relevant then now during the computer revolution.

3. Mediacy. Literacy served one during the age of the book. Mediacy is needed for the total communications culture. It is an all-media literacy. It studies the forms of human communication one at a time and then in comparison and contrast. It realizes that what is united in the experience of people should also be united in their understanding. It sees the value of the arts as privileged ways of shaping a rich and flexible sensory life. It realizes that the person of one book or of one medium is a limited person.

MEN AND WOMEN SPEAK DIFFERENT BODY LANGUAGE

by

JANET LEE MILLS
The University of Oklahoma
Norman, Oklahoma

This paper will entertain three propositions. First, men and women in this culture speak different body language. When this topic was presented at the 14th Annual IVLA Conference a major portion of the presentation was devoted to describing and demonstrating sex differences in nonverbal behaviors which have been documented in the research literature (Henley, 1977; Goffman, 1976; Frieze and Ramsey, 1976; Weitz, 1976). From time to time I asked the audience members to participate in this program--as a data base to check out the sex differences described. Volunteers enacted their well-learned gender repertoires on stage. I wanted them to see what I was talking about: I wanted to provide them with the opportunity to see themselves within the context of their own and others' gender identifying nonverbal behaviours. They did.

The second proposition is that these sex differences we can observe in nonverbal behaviours make a difference in the social context of male-female relations. That is, these sex differences we are about to describe function to define, maintain and extend the traditional hierarchy in which females are submissive to dominant males (Henley, 1977; Goffman, 1976; Frieze and Ramsey, 1976). At the IVLA conference I was able to both describe and demonstrate how it is that men speak the language of power and dominance, signaling to themselves and to others their high status and supremacy in the social-sexual hierarchy. I was also able to describe and demonstrate how it is that women speak the language of affiliation and submission, signaling to themselves and to others their relatively lower status and subordination in the social-sexual hierarchy. The audience went away with some very clear pictures of what Goffman calls "gender displays" and an awareness of the political function such behaviours serve (Goffman, 1976). The demonstrations were important to that result, and it is unfortunate that only the descriptions can remain in this paper.

Goffman coined the term "gender displays" to refer to the formalized, ritualized behaviours males or females characteristically perform. From an ethological point of view, gender displays are emotionally motivated behaviours that have become stereotypic, either by simplification or by exaggeration, so that a brief expression suffices in lieu of the playing out of an entire act. Goffman asserts that gender displays affirm what the basic social arrangement should be and present doctrines about people and social order. He notes that gender displays are typically dialogic in that a gender statement by one person in the presence of an opposite sex person tends to call out a reply, and political, in that gender statement-response pairs tend to occur in patterns showing masculine dominance and feminine subordination. Henley concurs with Goffman on the political functions sex differences serve (Henley, 1977). Maintaining the "personal as political" feminist perspective, she points out that statements of power and sex are fused in micropolitical gestures which serve as the glue that holds together a power hierarchy in which females are submissive to dominant males.

The third proposition is that managerial/professional women frequently find themselves in a double-bind because the demands of their traditional sex role training are in direct conflict with the demands of the managerial/professional role (Cutler, 1976; Watzlawick, Beavin and Jackson, 1967; Watzlawick, 1963; Bateson, Jackson, Haley and Weakland, 1956). Consciously or unconsciously, two opposing sets of rules for women's behaviour set up contradictory injunctions. From the depths of sex role socialization comes the impetus to express femininity--show deference, affiliation, ingratiation, subordination, submissiveness, and passivity. From the managerial/professional role comes the demand to express dominance, aggressiveness, superiority, confidence, initiative and activity.

A four-stage model is proposed to describe how women's nonverbal behaviour evolves over time in the managerial/professional context as they respond to the double bind. These stages include: (1) sex role enactment, (2) sex role reversal, (3) situational flexibility, and (4) integration. It is proposed that this final state represents an integrative resolution of the double bind.

Men and Women Speak Different Body Language

This portion of the IVLA presentation involved the experiential, experimental participation of audience members. The objectives of the demonstration, exercises and body sculpts were: (1) to provide visual and visual-kinesthetic representations of the research literature on sex differences in nonverbal behaviour, (2) to enable participants to dramatize masculinity and femininity in their own bodies, and (3) to assist participants in an integration of masculine-feminine (power-affiliation) nonverbal behaviours. Table I provides a summary of research on sex differences in nonverbal behaviour.

> *". . . sex differences . . . make up an elaborate signal system that announces gender identification. Fused with these statements of gender, . . . are statements of power and status."*

These Differences Make a Difference

The sex differences in nonverbal behaviour so far described make up an elaborate signal system that announces gender identification. Fused with these statements of gender, however, are statements of power and status (Mayo and Henley, 1981; Henley, 1977; Goffman, 1976). When a man signals his masculinity, he signals at the same time his dominance, activity, high status, and superiority. When a woman signals her femininity, she signals at the same time her submissiveness, passivity, low status and subordination. A

TABLE 1

Sex Differences in Nonverbal Behaviour

Behaviour	Females	Males
LEG POSITIONS		
sitting	intrafemoral angle = 0°	intrafemoral angle = 5-15°
leg crossing (Birdwhistell, 1960)	cross at ankles, thighs tense and together	cross at ankles with thighs relaxed and spread
	cross at knees, hold lower legs parallel and close together, point toes in direction of underneath leg, tuck feet under chair	"broken four", ankle to knee cross cross at knees in formal settings
standing posture (Goffman, 1976)	ballet position "3" or "4" with weight on one hip	feet about shoulder width apart, weight balanced evenly on
	"bashful kneebend" with one knee bent toward the other, toe near instep of other foot	self defense position with one foot slightly forward of the other,
		down through flexed knees
movements	pivot with feet, legs, hips and shoulders to place weight on other side of body	rock back and forth toe to heel shift weight side to side
ARMS AND HANDS		
upper arms (Goffman, 1976; Birdwhistel, 1960)	hold close to body	hold 5-20° from body
	seductiveness--one arm raised to stroke hair or back of neck	power spread--arms spread wide with hands behind head at nape of neck
wrists (Birdwhistell, 1960)	flex, bend	hold stiff

Behaviour	Females	Males
gestures (Henley 1977)	small, more inhibited	large, more forceful
shoulders (Brown, 1974)	lowered, especially in the presence of males	squared
arms crossed (Goffman, 1976)	display fingers palms up	hide fists under upper arms
hands (Goffman, 1976)	lace fingertips lightly	palms down
	expressive, exploratory touch of objects	grasp at front or back
		utilitarian, instrumental touch of objects
hands on hips	spread fingers, bend wrist	fingers together, wrist stiff
hands in pockets	jacket spread open by arms	jacket closed, arms go under sides of jacket
	hands all in pocket or modified hands on hips	
OVERALL POSTURE (Henley, 1977; Goffman, 1976)	tense, at attention, tight	relaxed, at ease, loose
	imbalanced in body cants with tenuous relationship to gravity	balanced with good relationship to gravity
	constrict in space, yield to others	expand in space, intrude on others
PERSONAL SPACE (Henley, 1977; Goffman, 1976; Frieze and Ramsey, 1976)	female pairs stand close	male pairs stand farther away
	female-male pairs stand intermediate or closer than female-female pairs	
USE OF BODY		
passing positions (Collett and Marsh, 1974)	pass with closed limbs, body away from other	pass with open limbs, body toward other
floor sitting (Hewes, 1957)	legs folded, angled to one side or legs straight ahead, crossed at knee	more positions than females

Behaviour	Females	Males
floor sitting (continued)		tailor position
		legs angled straight ahead
		knees up, feet on floor
bend to pick up an object (Henley, 1977)	knees together, back straight, arms close to body, approach object at side	knees bend in squat, back flexible, arms extend from body, approach object from front
gait (Birdwhistell, 1960)	present entire length of body as moving whole	sway hips
PELVIC TILTS (Birdwhistell, 1960)	roll pelvis forward, tuck under buttocks, flatten abdomen	roll pelvis backward, protrude buttocks, abdomen hangs loose
HEIGHT COMPENSATIONS (Tall women/short men) (Goffman, 1976)	shrink, shuffle drop shoulders	expand; walk tall raise shoulders
	body cant at knees	stretch spine upward
	condense spine downward	head straight, elevated on vertical axis
	head cant, bow	
FACIAL DISPLAYS		
smile (Ragan, 1982; Henley, 1977)	greater frequency, intensity and duration	less smiling, rarely smile with teeth showing
emotional displays (Henley, 1977; Goffman, 1976)	greater frequency, intensity, duration and range of emotions	less emotional display deintensify, neutralize and mask emotions
	anger displays not appropriate	fear and sadness displays not appropriate
eyes (Henley, 1977; Goffman, 1976)	hold wide open brows arched	relax muscles around eyes
looking behaviours (Henley, 1977)	attentive watchfulness, with frequent gaze aversion or lowering the eyes	ignore or stare

Behaviour	Females	Males
changing direction of visual attention (Birdwhistell, 1960)	close eyelids while shifting eyes	keep eyes open while shifting eyes
HEAD POSITIONS (Henley, 1977; Goffman, 1976)		
cant or tilt or cock	greater frequency, duration and degree of cant	less canting
bow or elevation of head on vertical axis	bow, lower head	elevate or keep head erect
nod	greater frequency and intensity	less nodding

female's affiliative behaviours such as smiling and canting serve largely as appeasement signals, indications that she is no threat, that she is properly respectful and deferential (Henley, 1977).

There are many contexts in addition to the male-female context in which these "masculine" and "feminine" behaviours are played out as reminders of social order and hierarchy. Up/down and big/small are enacted as principles of social-physical order in a number of same-sex contexts and in contexts where sex of interactants is irrelevant to the rule. For example, two Japanese men who are acquainted and meet on the street bow to one another in greeting; the man of subordinate status bows lower. Another example involves the nonverbal display of attitudes of worship. Most religions use bowing the head as an appropriate signal of respectfulness and reverence. Kneeling and lying prostrate on the floor represent further degrees of lowering the body to increase distance between deity and mortal. Another context in which up/down principles define and maintain social order can be observed in kings' heads needing to be higher than those of their subjects. Such was the case in Hawaii. Visitors to the Hawaiian Cultural Center today can observe the king's hut built on stilts, on a hill, to be higher than the other huts. Inside, a raised platform holds a great pile of straw mats (the king's bed). These arrangements were carefully engineered to be certain the king's head was always above the heads of tribespersons. While in Thailand, an acquaintance of mine danced in the Royal Court, maintaining two rules: (1) keep eyes fixed on the floor six feet ahead and never make eye contact, and (2) keep your head lower than all royalty and guests of royalty. Westerners are amused with this rule; in The King and I Anna cannot seem to remember to respect the rule of order.

The last context in which many of these nonverbal principles of order are expressed is the American military. Having taught graduate courses at a half dozen or more military bases for the University of Oklahoma, I have made many informal observations of hierarchically determined behaviour. Captains offer salutes and at-attention postures upward in the hierarchy to majors and colonels; similarly, women offer smiles and dropped eyes to men. The higher ranking officer initiates a handshake (or not), just as males usually make the approach to females (or not). In many classes I have taught, participation of military persons has been slow or unsteady--until the highest ranking officer has participated fully, giving tacit approval to the others down the hierarchy to participate. Even in informal settings the hierarchy is intact; at a beach party a major told a joke and the lower ranking officers around him laughed and laughed and laughed. Laughter, like smiling, is offered upward in the hierarchy. Then, one brave captain said, "Bullshit, sir."

In summary, there are many contexts other than male-female relations where similar gestures and nonverbal behaviours function to define and maintain the power hierarchy. These observations offer further evidence for Henley's and Goffman's hypotheses that sex differences in nonverbal communication behaviours function to announce and maintain the preferred social order (Henley, 1977; Goffman, 1976).

"In time, the double bind loops back on the male. In repeated transactions, he does not know whether opening doors for female peers and superiors is good grace or insult. . . ."

The Double Bind in Mixed Sex Management and Professions

Most women in managerial or professional roles today are tokens or are in such a minority that the differences presented or supposed by their sex become an issue. They play two roles simultaneously, that of woman and that of manager or professional. Both these roles have different sets of rules, and these sets of rules are contradictory. To be successful in terms of femininity, a woman needs to be passive, accommodating, affiliative, subordinate, submissive and vulnerable. To be successful in terms of the managerial or professional role, a woman needs to be active, dominant, aggressive, superior, competent, confident and tough. In their everyday communications with others, especially with men, women face a paradoxical dilemma. Feminine behaviours are taken as evidence of an inability to cope with the demands of the managerial/professional role; behaviours fitting the managerial/professional role are taken as evidence of lack of femininity. This sort of no-win situation was first discussed in the '50's as the "double bind" theory of schizophrenia (Bateson, Jackson, Haley and Weakland, 1956).

The double bind is a pragmatic communication situation in which there is no appropriate response; whatever a person does, he or she cannot win. Watzlawick (1963) summarized the conditions necessary for the double bind.

First, two persons must interact, one in the role of victim. Second, such interactions must be frequent enough so that the victim develops a habitual expectation of the no-win situation. Third, the recurrent communication must include (a) an assertion and (b) an assertion about the assertion which renders both assertions mutually exclusive. Fourth, the victim cannot step outside the frame set by the paradoxical communication to comment on the paradox; but pragmatically, he or she must respond to the illogical injunctions. Finally, double binds do not remain unidirectional; the victim's response has a way of looping back on the double-binder so that he or she also experiences a double bind.

Professional and managerial women experience the double bind in the following way. First, they are generally set up as victims or deviants since they occupy token or minority status in the male dominated workplace; they are, after all, the ones who look different and act different. Kanter (1977) describes how the relative numbers of socially different people in an organization provide a social structural context for predictable individual behaviours. Second, managerial/professional women experience repeated interactions which single out their behaviour as appropriate to one role but not to the others.

"Feminine behaviours are taken as evidence of an inability to cope with the demands of the managerial/professional role; behaviours fitting the managerial/professional role are taken as evidence of lack of femininity."

Third, the contradictory injunctions women receive occur in subtle nonverbal interactions as well as in direct verbal statements. For example, the simplest of social graces, such as door opening manners, can provide a forum for paradoxical injunctions to be issued from a male to his female boss or coworker. If he follows Amy Vanderbilt's social program, he opens her door, asserting their traditional sex roles; the assertion about the assertion is that the work roles are secondary and less important. If she accepts his graces, she signals her agreement to be defined as feminine and hierarchically different. If she objects to his graces, she may get the professional treatment she wants, plus some objections to her objections which call into question her femininity. In time, the double bind loops back on the male. In repeated transactions, he does not know whether opening doors for female peers and superiors is good grace or insult, and he, too, is then damned-if-he-does-and damned-if-he-doesn't. Another familiar scenario of contradictory statements includes a woman who has just given an excellent speech (or landed a good deal or made a brilliant proposal) and a person (man or woman) who comments on her style, ignoring her content. Other worn-out interactions inducing the double bind include the professional woman who is asked to serve coffee, take minutes, fetch and go, play mascot, smoothe troubled waters, hear personal problems on company time, and the like. Double binds also ensue when men adjourn to the bar, hush the dirty jokes and four letter vocabulary, use military metaphors and sports jargon they assume women won't understand, and so on.

The last essential element of the double bind is that women cannot or do not step out of the frame of the contradictory injunctions to comment on the paradox. Why not? First, some women are naively unaware of the role conflict they experience, or else they blind themselves to that essential conflict with belief in equal opportunity and the goodness of their own intentions. Others fail to comment because they are acutely aware of the role conflict and of their marginal membership in the managerial/professional role. To comment would be to draw attention to that conflict or that marginality. Comment might also draw attention to the fact that women are indeed intruding into the male world, that role conflict inevitably accompanies such intrusion, that males are uncomfortable with this wave of social change, and that everybody is at least a little nervous about woman's new presence. To comment might increase a woman's visibility around issues which are not relevant to the central, pressing mission of the organization. To comment might mean to risk being understood to be an overly emotional, hairsplitting, reactionary libber. To comment may mean the staging of a complaint against the white male system. To comment might mean to blame, to become the persecutor's persecutor. Thus, the essential elements of the double bind are in place and operational in the mixed sex professional workplace.

Through the Horns of the Dilemma: A Model Describing the Stages of Development of the Managerial/Professional Woman in Resolving Role Conflict

A four stage model is proposed which describes how a woman's nonverbal behaviour evolves over time in the managerial/professional context as she responds to the contradictory injunctions "be feminine" and "be powerful" (see Table 2). In each stage, her nonverbal behaviour is assumed to be an externally observable expression of her internal response to the role conflicts and double binds in her experience.

Table 2

Stages of Development in the Nonverbal Behaviour of Managerial/Professional Women

I. Sex Role Enactment: Feminine behaviours prevail
II. Sex Role Reversal: Power behaviours prevail
III. Situational Flexibility: Alternation between feminine and powerful behaviors
IV. Integration (Simultaneous Mix): The powerful, feminine woman

In Stage I: Sex Role Enactment, a woman enters the professional or managerial workplace enacting her traditional sex role socialization. Her nonverbal behaviours are predominantly those we described earlier as feminine (See Table 1). She signals her subordination, submissiveness and affiliation, presenting a social self that others respond to as weak, ineffective and unimportant. Her femininity, which has worked like a charm until now, fails her. The smiling, canting, bowing, head nodding, attentive looking, and gaze aversion elicit quizzical or incredulous replies. As she constricts herself in space and palms at others, she steadily loses power and invites others to dominate her. Meanwhile, her male counterparts, who are expressing their traditional masculinity, gather and use power, signal their dominance, and invite her to follow them. They appear powerful, competent and confident. The same masculinity they used to win in sports, politics and dating is congruent with the demands of the managerial/professional role.

It does not take a woman long to realize that her femininity is failing her in the managerial/professional role. The negative feedback abounds. It does not take a woman long to decide, "When in Rome, do as the Romans do." She begins Stage II: Sex Role Reversal by observing and imitating the successful men who are available as role models. The nonverbal message a woman begins to send at this stage answers the "be powerful" demands of the work role. If she was a bit of a tomboy in her early teens, this sex role reversal may seem very natural. The nonverbal expression of this stage may take subtle or blatant forms. She may begin to dress in non-feminine ways to say "sex is not the issue", wearing pants suits, skirted suits, or other uniforms that allow her to fit in with the least of notice that she's female. She may begin to spread out arms, gesture big, talk loud and long, interrupt others, wear less make up, add personal effects such as the attache, horn-rimmed glasses, and other totems of the male culture. Her adoption of these wares and ways, however, fail to win her favor in her managerial or professional role. Others respond to her as a deviant--an imitation or plastic man, an emasculating female, a competitive bitch. She is a woman out of touch with her femininity, perhaps a Lez--and everybody knows what she needs. Her sex role reversals backfire largely because she has done a pendulum swing--from soft and feminine to hard as nails. Her messages of power speak of her managerial skill, but she neglects to express her femininity. Men (and other women) court, coax, tease, and demand expressions of her femininity. Many women in sex role reversal become angry and frustrated. They have found neither sex role enactment nor sex role reversal to elicit the response they want. At this point, a woman may return to sex role enactment, persist in sex role reversal, or begin Stage III: Situational Flexibility. The consequences of persisting with deviant behaviour in the face of pressures to conform can lead to severe consequences such as rejection or ostracization (Schachter, 1968).

Stage III: Situational Flexibility seems, at first, a desirable resolution of the be feminine/be powerful paradoxical injunctions. It also appears to be a rapid shifting between Stage I and Stage II. The idea is not all that difficult to come by. Perhaps she goes away for leadership training and hears about situational flexibility, perhaps she just gives up and decides to do what the situation dictates. The result is the same because at this stage, the woman sometimes comes on soft and feminine, and at other times chooses to take a tough stance. Sometimes she responds to "be feminine" and sometimes to "be strong". As appealing as the plan may be, it, too, fails. "Femininity = passivity" is the baseline of expectation others bring to her, so her deviations from passivity are regarded as evidence of an uncertain disposition, not as flexible behaviour under her control. She is described as whimsical, fickle, unable to make up her mind. She is flighty, inconsistent. Her changing behaviours are evidence of her time of month, or, if she is older, symptoms of menopause. Her situational flexibility, be it a well thought out program or a relatively unconscious Stage I--Stage II alternation fails her.

The crux of the failure is that she is still responding to one role demand at a time: be feminine here, be powerful there.

In some women a synthesis of the "be feminine" and "be powerful" demands occurs and this is what I describe as Stage IV: Integration. In conscious or unconscious ways, the injunctions become fused to "be powerful and feminine" so that the either-or dualism collapses into an integrated whole. The nonverbal behaviours of a woman in Stage IV include a simultaneous and continuous flow of gender cues and power cues. From some communication channels come signals that clarify her gender as feminine and from other channels come signals that clarify her status as powerful and competent. The overall composite of messages is both gender appropriate and work role appropriate. For example, she may sit with legs crossed in a feminine manner, but spread out her arms, gesture big, keep her head high and straight, and speak distinctly. She may smile and head nod only occasionally. She likely omits some submissive and seductive cues.

The key to the success in this integrated stage is that both roles have become internalized so that the expressions of each come forth naturally in interactions with others. Further, a woman in this stage reads the responses of others as feedback and uses this feedback to fine tune her own behaviour so that she elicits the responses she desires from others. She modulates the effect she has on others, sometimes emphasizing her power, sometimes her gender; but always, both sets of cues are offered simultaneously. Nothing is given up--certainly not her femininity. Rather, added to her femininity are cues that signal her competence, confidence, strength and high status. One woman may achieve this blend in a fast-paced, dynamic style; another woman may achieve it in a slower paced, stately, almost regal style. Other people respond to this simultaneous mix positively because there is nothing missing. In Stage I: Sex Role Enactment, power cues are missing, and a woman can be discredited for that deficit. In Stage II: Sex Role Reversal, gender cues are missing, and a woman can be criticized accordingly. In Stage III: Situational Flexibility, one or the other set of cues is missing at any given time; a woman may be criticized for her deficit of the moment or, perceived poorly for her polar swings overall. Only when gender cues and power cues are presented simultaneously does a woman move through the horns of the dilemma, signaling to the world how to treat her and signaling to herself that she is a powerful, feminine person.

Summary

The goals of this session were (1) to contrast male versus female nonverbal behaviour, (2) to describe the functions these differences serve in defining and maintaining the traditional male-female hierarchy, (3) to elaborate on the double bind placed on men and women in managerial/professional contexts today, and (4) to propose a four stage model which describes how a woman's nonverbal behaviour evolves as she copes with role conflicts and double binds.

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IN-SIGHT

by

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The external world can be seen as a puzzle--a visual array of lines, shapes, rhythms, colour, and movement. Patterns emerge and meaning imbues form. As the pieces of the puzzle are juxtaposed, the perceived forms are transformed by being included in a coherent and personal world view. This is as true in a philosophical as a visual sense.

Insight is gained by a recognition of the meaning and relationship of the images perceived The role of the creator is to formulate a subjectively wrought view of the world. In-sight has a Joycean ring, like the "agenbite of in-wit"; self reflection implies consciousness of meaning. All art forms are a statement and a performance of idiosyncratic meaning arising from individual synthesis of the components of reality into a personal vision.

Magritte, for example, is an artist who transforms the ordinary consciousness of forms. He sees the world as a puzzle not to be solved in a predetermined way but to be recreated by a personal view. He dares to play with the components of his vision because he is at ease with the absurdities of relationships and can use the anomalies and anachronisms to create his own sense. In his creative play as an artist he gives the viewer a new window on reality where forms interact unexpectedly and spontaneously within the frame of his mind.

Visual literacy transforms perceived forms into events in consciousness. In Magritte's image "The False Mirror" (see Figure 1) sight is turned on itself and reflects only the wider reality of the world. The image creates a new juxtaposition and new insights emerge which illumine the sensual understanding at another level. We see this simultaneously, deeper and higher--Deeper into self-awareness and Higher in universal consciousness. It is at once a statement and a performance of meaning. We participate in his manipulation of external reality and become accomplices in his visual tricks of the trade. This, in turn transforms our personal vision through new information.

A transformation model for visual literacy can give insight to the process of the emergence of meaning. It is an example of visual literacy which elicits and extends in a creative continuum of insights.

Forms are imbued with meaning through the interplay of mind and matter and interact as ideas in the intercourse with the world. The model (Figure 2) is designed as a continuum retracing its own path in an infinite reinterpretation of reality. Performance of any idea transforms it in the continual creation and evolution of new forms. Synthesis leads to analysis, leads to synthesis, and nothing is lost, the energy is transformed in the "twinkling of an eye" to new forms.

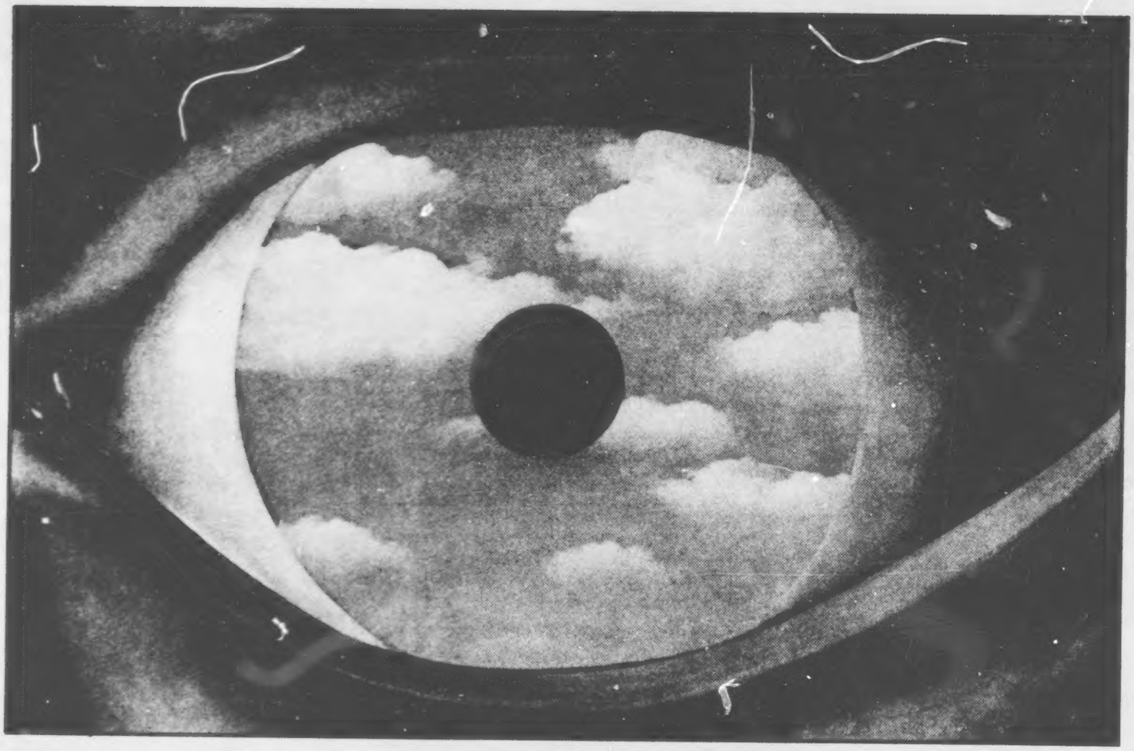

Figure 1. Magritte's "The False Mirror."

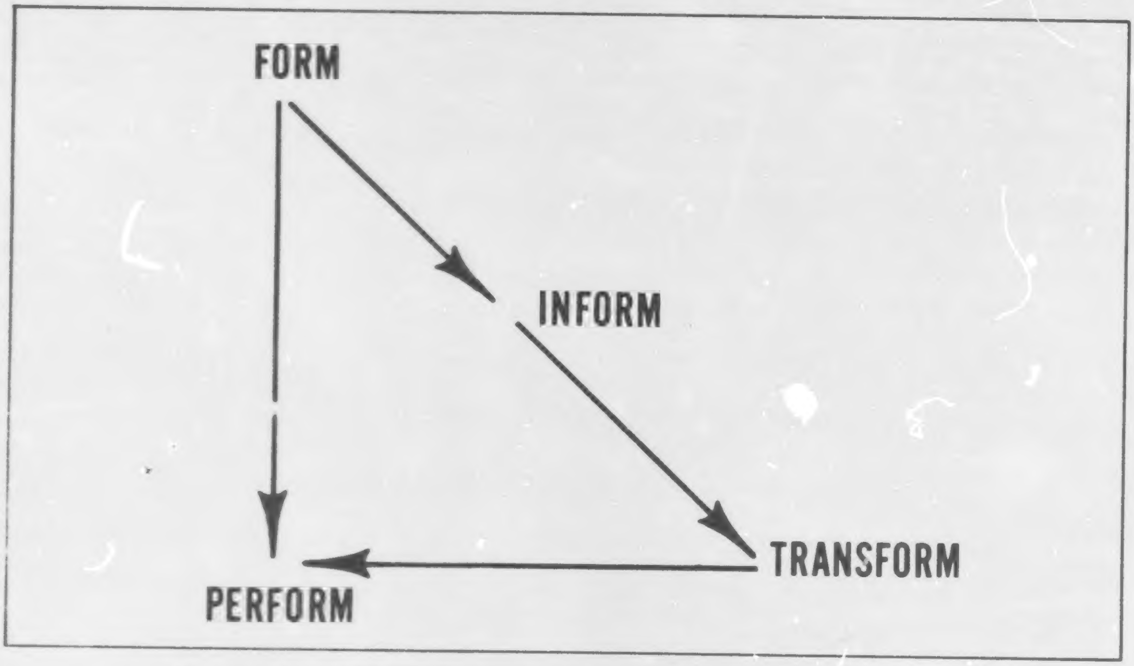
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Figure 2. A transformation model for visual literacy.

The eye senses the essence of things through direct visual contact unmediated through a semantic filter. Visualization and literacy both transform ideas held in the mind. Visual literacy represents familiarity and fluency with the images gained through the eye which converge in consciousness. All transformations are by the engagement of the mind as an artist in the creation of new forms.

The "EYE" is the "I" seeing!

Meaning in any form is apprehended and created by the intelligence of a conscious being. Calib Gattigne in Toward A Visual Culture makes sense when he says the eye synthesizes. But, what is the synthesis?

The power of the intellect synthesizes singular and discrete forms into order and conscious meaning. As artists playing with the possibilities we in-form the external world with new meaning created to the inner one. Thus, we live as our own creator in the flesh. Eric Kohler, in his book, Man the Measure, says "To have individuality is not to be one's self but to have a 'self' to be." The measure of our insight is the richness and complexity of the images in the self-created world view.

Is inner meaning perhaps the first "dimension" of the form of ideas? Meaning can be transformed into two dimensional, three dimensional or four dimensional representation. Acoustic form can be created, too, as the fifth dimension; and the idea increases in complexity with a multi-dimensional interpretation in consciousness of the image.

When one dares to trust the premise of the senses and allows the images to flow in and out of what L. J. Rollof in The Perception and Evocation of Literature calls the "sensorium," we form an incredibly rich soma base to all understanding. He believes in the "soma." A body sees, hears, intuits, feels reality in an experiential intuitive manner. Visual literacy is based on the senses.

Images have a sensual source. Insight or inner sight is the understanding of the power of the images within. The pathways of the senses converge in the imagination and though there is no existential inner eye, we "see" inwardly in a compelling way. One child with the naivete of common sense said, "Dreams are the pictures you see when your eyes are closed." He echoed The Prophet, Kahlil Gibran, who expressed this idea of insight.

> It is not the image you see
> Nor the song you would hear
> But, rather the image you would see
>   though you close your eyes
> And the song you would hear
>   though you shut your ears.

Art uses the expressive power of these images to create an internal form with meaning.

The question is: How can the imagination be educated to generate the ideas implied by visual thinking or literacy? How can media convert ideational energy to visual form? Education of the imagination awards a creative mind with the license of self-expression.

All self-expression re-identifies the creative self. "I" is a vertical pronoun, a self referrent, a symbol of the one in the world. Insight transforms through the imagination or "I magic"! In another transformation this becomes "I magication"--a synthesis of education and imagination. It creates a new identity.

Education today develops multiple realities. Insight gained through printed symbols once was the mark of the literate. Rhetorical literacy with its emphasis on language may still be the first model but it is now complemented by media or visual literacy for transfer and initiation of ideas. Today we are "illumined" in a way never possible before the media use of light-transformed images which are interpreted through the eyes.

The EYE creates its own forms. An example of this is the meaning represented visually in one's name or signature (see Figure 3). How does it look and how can it be transformed into a visual idea of self? This is the play of the intellect on the identity to create self-symbols--an insight that transforms the image of self. The eye pleases itself in this transformation of meaning to new forms.

Today, in a transform of traditional forms itself, literacy means fluency with ideas and images. This has its own tradition. Visual literacy at the time the Book of Kells was written, for example, included the interpretation of the intricate labyrinths of the illumination of the manuscripts. In works of art, they expressed the creative mind of an artist which transformed even the scripture.

The eye of the artist, and of the child, also recreate the world in its own version of reality. (See Figure 4.) What insights to the child's eye, or his emerging identity, are to be found in this transformational puzzle? The puzzle has infinite compositions and its transformations arise from the insights of minds literate enough to be surprised by new patterns of seeing. One famous child with remarkable visual literacy attracted the eye of the great Italian primitive Cimabue. He passed a field where a young shepherd drew, stone to stone, an image of his father's sheep. That boy was Giotto, who became one of the great emancipators of the visual tradition of the thirteenth century--the early Renaissance. His powers of observation synthesized a visual metaphor for reality. His EYE transformed the consciousness of an age and his view became an historic record of a social context. He "illumined" others with his insight and vision. Children in Italy today use "Giotto" coloured pencils in the development of their own visual literacy.

Children today, seeing themselves in social context, gain their insight through the eye of media. The ability to conceptualize themselves as part of a world of historic, social, literary and imagical realities is education of the imagination. Part of the development of their visual literacy includes the development of a self-image and this is the area of real transformation and insight. Freedom of the imagination creates the energy necessary for the transformation of reality into a personal view.

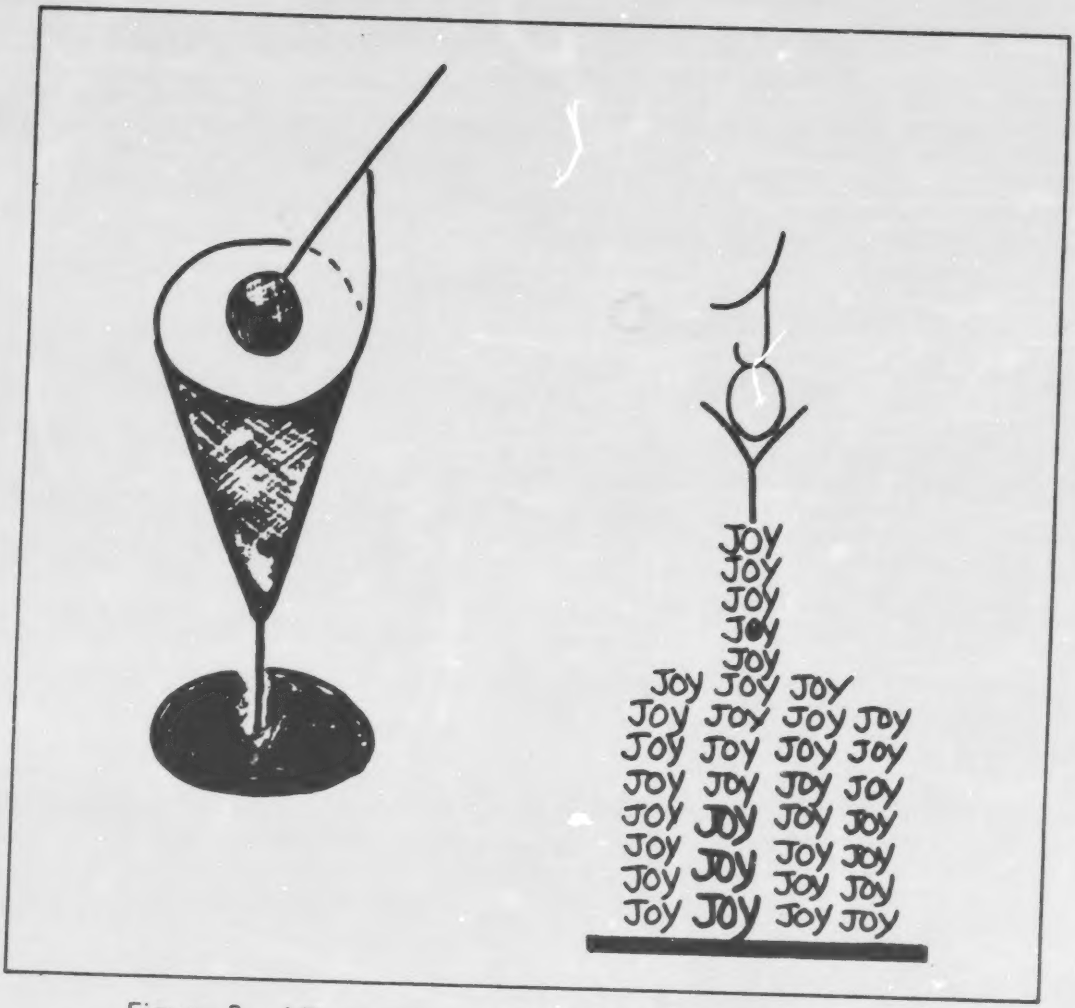
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Figure 3. Visual meanings in one's name or signature.

Visual literacy represents entry into a meta-world of the mind--a journey into new ways of seeing and sensing and interpreting, to create metaphors rich with personal meaning. These visual metaphors are transforms of the truths of reality inherent in the perceptual world. Insight can be gained through the sentinel of the EYE and is a reflection of one individual in the world. Like Magritte, each one can make the puzzle within the frame of his own existence, a window looking out on life which reveals, at the same time, the imagination of the viewer.

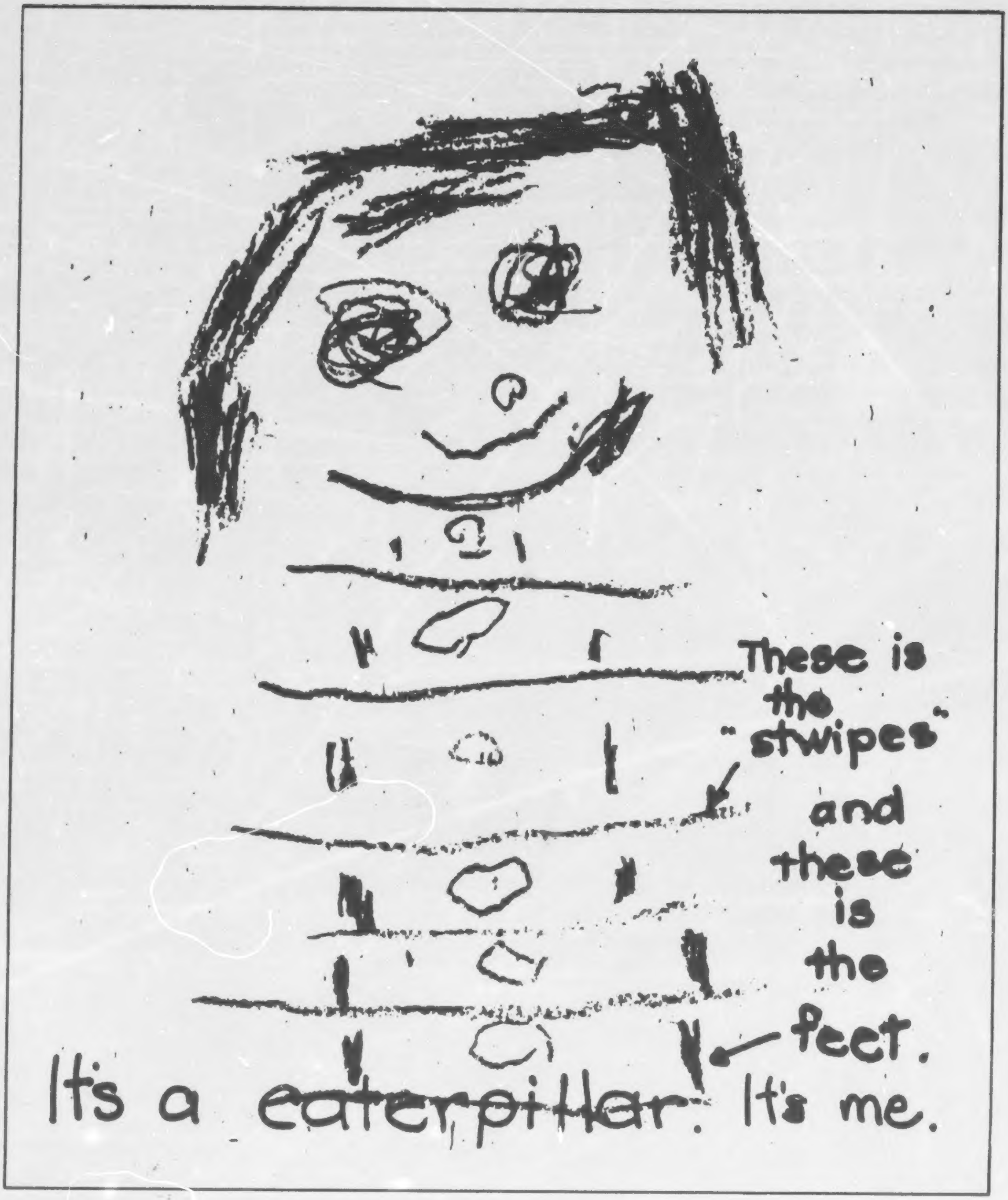
These is the "stwipes"
and these is the feet.
It's a ~~caterpillar~~. It's me.

Figure 4 Self-portrait by Mike; artist's comments recorded by teacher.

PLAINS INDIAN PICTOGRAPHIC PAINTING: MORE THAN ART

by
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Part of everyday life is a constant barrage of an almost infinite variety of impressions, some stimulating, others not. We have learned to recognize which impressions are important and which can be ignored. Some of the impressions we receive are the result of signs or symbols designed to convey various types of information.

It is probably safe to assume that there is at least one symbol for every situation. Picture yourself doing something. A mental examination of the associations of your chosen activity will lead your mind to a symbol. If you saw that symbol in a disassociated setting, you would probably think of the activity or philosophy the symbol represents. The would-be mind-managers of a society are fully aware of this human capability. We are directed by traffic signs and instructive colors. We are influenced by newspapers, films, campaign posters and advertising. We are shown paragons of virtue in park statues, postage stamps, currency and religious art. We are taught to recognize evil-doers and recalcitrants by the wanted posters in post offices. We are brought face-to-face with the threats to our way of life by propaganda material. We are warned of eternal damnation by depictions of hell and the devil. We are introduced to authority figures by badges and uniforms. We support the greeting card industry by giving each other symbols of affection and gratitude. We are made aware of our group membership by flags, patriotic colors and mascots. Some of us are amused or dismayed by the indirect messages resulting from the accidental or purposeful mismanipulation of familiar symbols.

"The components of Plains pictographic art are abstractions, conventionalizations and symbols of their material and spiritual life. The forms of the paintings directly represent objects or concepts, but they also evoke responses."

Though the above examples of communicative symbols are modern, this does not mean that other periods and cultures were not familiar with the use of symbols and graphics to convey information and influence behavior. The Plains Indians of North America, for instance, used symbols and pictographic drawings for these purposes. An examination of extant pictographic works, and the references to such works in the ethnographies, reveals that the Plains Indians used signs, symbols and graphics to give directions, identify praiseworthy national figures, identify threatening enemies, depict the sources and symbols of authority and power, send love messages and emphasize group membership. The Indian concept of the guardian spirit or sponsor is not too far removed from our use of mascots. And, like us, the Plains Indians were amused or dismayed by outsiders' mismanipulation of the Indians' own symbols.

Plains Indian pictographic art makes no attempt at three-dimensionality and, to our eyes, appears childish and untutored. In reality, Plains artists adhered to a rigidly standardized set of artistic conventions (Petersen, 1971: ix). These conventionalized, abstracted and symbolic forms appeared on a variety of surfaces, such as rocks and cave walls, clothing, weapons, tipis and tipi liners, and paper notebooks (see Figure 1). They functioned as mnemonic memory aids, geographical charts, personal communications, histories or chronologies (also called calendars or winter counts), and biographical and tabulatory records (Blish, 1967: 20), and as expressions of personal visions.

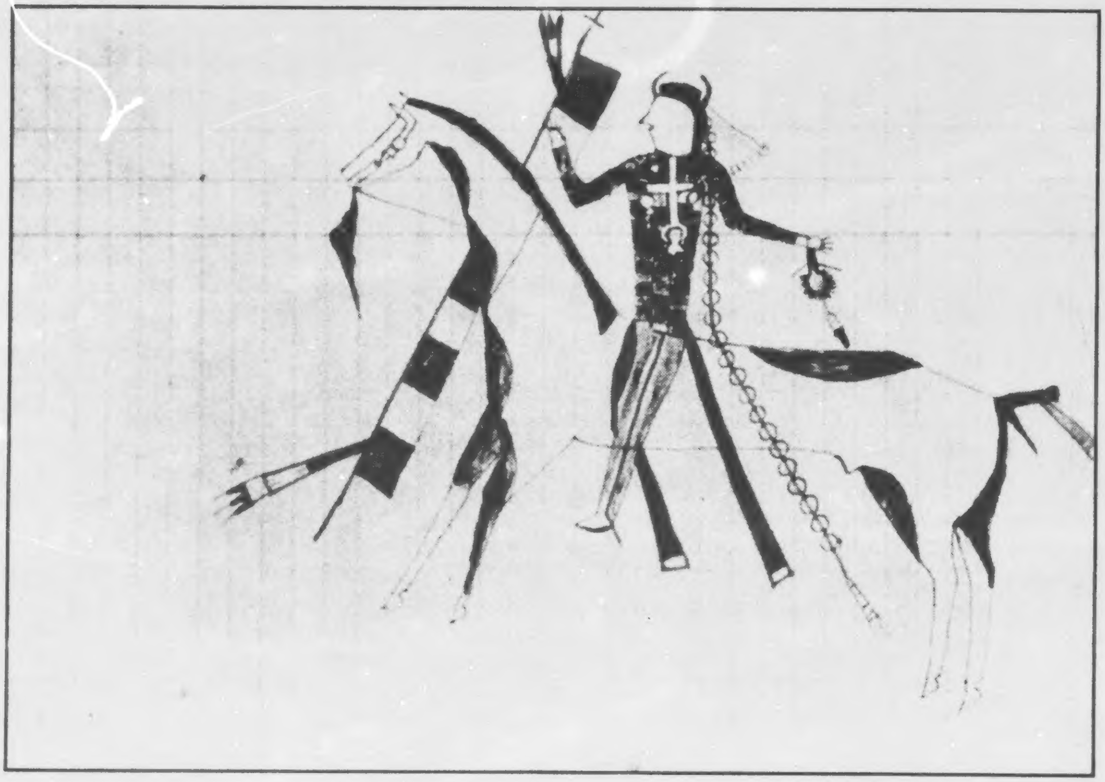

Figure 1. Ledger drawing: Cheyenne warrior with lance. From the collection of Michael Kerr.

The extreme simplification of the pictographic details reflects the Plains artists' rejection of naturalism. For a people skilled as artists and craftsmen, naturalism was certainly achievable; it simply was not desirable. Nor was naturalism necessary. The conventionalized figures in Plains pictographic drawings were equipped with all the visual clues necessary for easy identification by the group. Warriors were pictured with all the accoutrements of their warrior societies (Blish, 1967: xxi). Each man had a power-proven combination of paint, clothing, weapons, ornaments and charms to accompany him on his endeavors, and which was well known to his contemporaries (see Figure 2). According to Mari Sandoz, an Indian's personal marks were "never exactly duplicated" (in Blish, 1967: xxi).

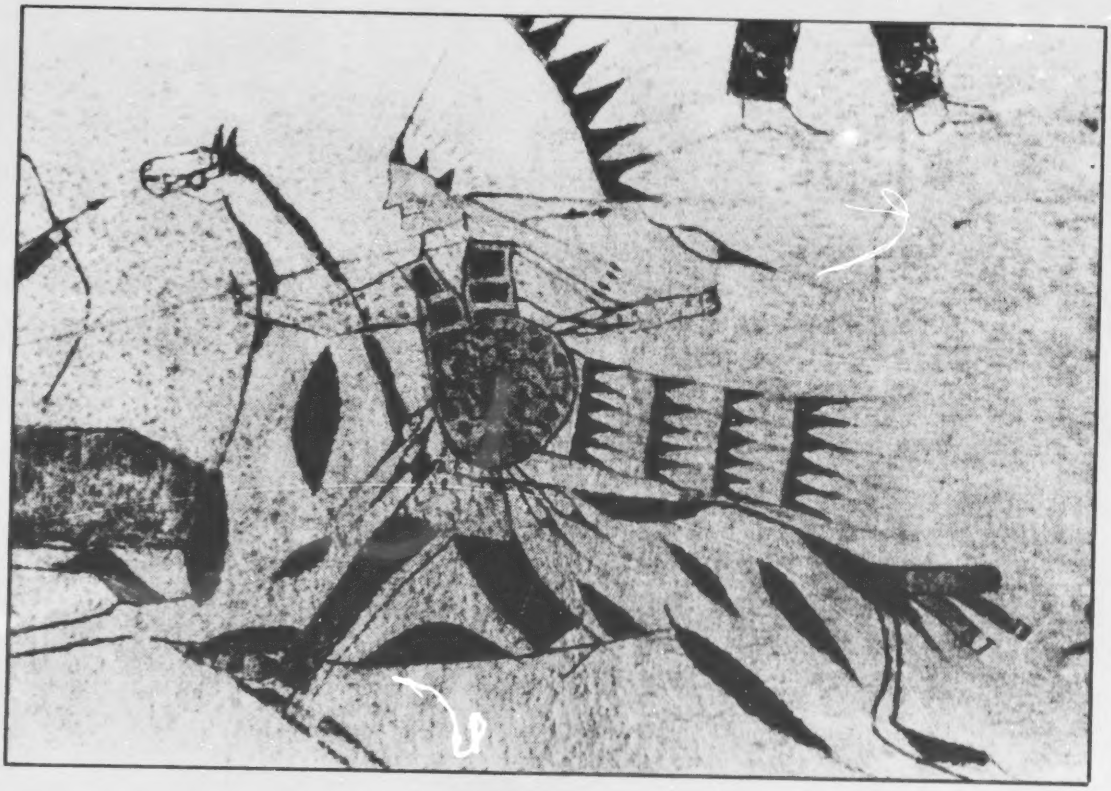

Figure 2. Cheyenne warrior with feathered shield.
Courtesy San Diego Museum of Man

Many Plains pictographic drawings are biographical and depict scenes of battle. In addition to portraying adventures from a heroic warrior's life, an underlying theme was the demonstration of national virtues and goals. The symbols and abstractions which expressed a man's exploits also expressed the relationship between the individual and his society. The symbols and their arrangement demonstrated how viewers could achieve a similarly prestigious reality.

All symbols are designed to communicate a message. The American Heritage Dictionary (1976) defines communication as the exchange of thoughts or messages, as by speech, signals or writing. Speech, then, is only part of the system of communicative acts characteristic of a group or culture (Hymes, 1964: 3). Myths, names, guardian spirit usages (Hymes, 1964: 8) and art are other major communicative events.

If an artist sees his art as a means of communication, he looks for the way to convey messages which can be interpreted by those with whom he wishes to communicate, and it is very likely he will look for those means within a field of publicly recognized symbols (Firth, 1973: 44). Firth feels that a major function of symbol is to facilitate communication (1973: 79). Plains pictographic painting consists of nothing but publicly recognized symbols. If the symbolism of the artist remained purely private or unrecognized, the philosophy behind the message would be lost to the community. No communication would take place. It is necessary, therefore, that the producer and consumer of symbolic art share the same set of values and interpretations of the symbolic images utilized (Firth, 1973: 40), especially since the symbolic associations of many experiences are not portrayed directly, but merely implied. Symbols may be regarded as a way in which individuals express their own experiences or feeling and attempt to communicate these by comprehensible images (Firth, 1973: 217).

The key phrase is 'comprehensible images.' It is difficult to ensure that an object created or selected by one person as a symbol will be identified by others as having the same meaning, unless cultural artistic and symbolic conventions are such that the artist is certain he is using symbols which will be readily recognized by his group. The difficulty in interpreting symbols increases as the cultural and temporal gap between artist and viewer widens. If the artist is not available for consultation, his intentions cannot be verified.

In her book on the Fort Marion artists, Karen Daniels Petersen states that Plains pictographic painting did not consist of "Indian symbols" or abstractions with symbolic meanings known only to the initiated, and that the art forms were simply shorthand versions of recognizable objects (1971: x). Plains pictographic paintings did consist of simplified versions of recognizable objects, but the interpretation of many forms is not always obvious to us. We are culturally and temporally removed from the society for which such works were intended. The abstractions and symbols used by Plains artists represented objects or concepts by association or resemblance. Since the artist was not much interested in communicating with people outside his group, the symbols selected did not need more than local or regional significance. In that sense, then, the symbolic meanings were known only to the initiated, the contemporary members of the artist's own group.

The impact of biographical Plains painting was designed to be completely local. These works were done by individuals who wished to preserve their own view of their people's history (Tillett, 1976: xiv). The drawings are admirable from an artistic point of view, but more than that, they are ethnographically informative. These paintings show material culture, ritual participation and, simply, how the people looked. According to Petersen (1971: 63), these drawings filled social needs by contributing to group solidarity by spotlighting exemplary individuals. The depiction of enemies reinforced the need for unity. Paintings with war themes demonstrated how prestige was earned (see Figure 3). Plains society admitted of much upward mobility in the sense that anyone who followed cultural norms could rise to high standing. This included women as particularly skilled craftsworkers, and men as skilled warriors with individual followings, and respected shamans and headmen.

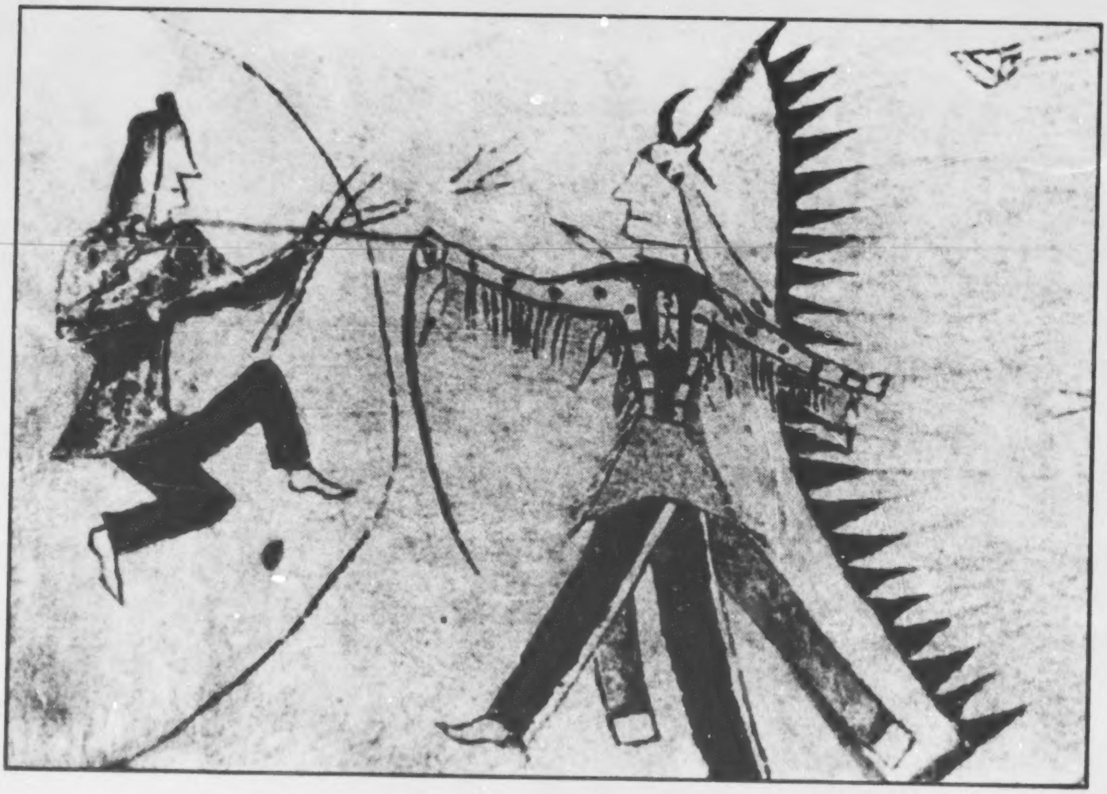

Figure 3. Cheyenne warrior (R) counting coup on a Crow warrior. Courtesy San Diego Museum of Man.

It was common for individuals to paint pictographic records of their own exploits, or to have others with more ability record them. Thomas Leforge was a white man who lived with the Crow for many years. He tells of the paintings he commissioned:

> The artist was imaginative enough to show me boldly running after the fleeing Sioux and just in the act of touching one with my coupstick. Another drawing exhibited me on horseback and driving rapidly before me a band of horses I had stolen--presumably from enemies. In yet another space on my wall was an area where nothing but horse-tracks appeared. This simple sketch told to an admiring Crow Indian world the whole story of

> my wonderful capabilities as a horse-thief. It cost me more than a trivial expenditure to get these paintings done. They were all Crow Indian work . . . a good Indian artist got well paid for his labors (Marquis, 1928: 151-2).

Leforge lived within Crow society. He wanted to be identified with and accepted by them, and he chose traditional native means to do so. Traditionally, the paintings of exploits were intended to make heroes of the autobiographers (Blish, 1967: xx). As a warrior among the Crow, this status would have been accorded to Leforge.

Many of these exploits were painted, as was Leforge's, on tipi liners, where visitors would be surrounded with graphic representations of the host's accomplishments. Other paintings appeared on shirts and wearing robes. Still others appeared on tipi covers. This was a means by which brave deeds were both recorded and accredited (McClintock, n.d.: 22). The families who lived in these painted tipis were proud of them. The supernatural power associated with these tipis gave the residents a sort of social prestige and good standing in the group (McClintock, n.d.: 3). These drawings also served to remind members of past events (Cheney, 1979: 9). Sandoz refers to painted records of this sort as "Who's Who entries of achievement" (in Blish, 1967: xx).

In his book on public and private symbols, Raymond Firth states that "symbols as stores of meaning help [us] to cope with problems of communications over time, aiding recall and obviating to some extent a need for reformulation of ideas" (1973: 81). This can readily be applied to the symbols and graphics of Plains Indian pictographic art. Records of individual and group events were preserved for exhibition so that all might profit from the examples therein.

At the end of the Indian war period at the close of the 1800s, many Indian prisoners drew pictographic versions of days gone by. Cohoe, a Cheyenne artist imprisoned in Fort Marion, Florida, drew pictures about relatives and other things he remembered when he was lonesome. He pictured a nostalgic reconstruction of a life that once was. His art is full of symbols of the supremacy of the conquerors (Hoebel and Petersen, 1964: 3, 20).

There were many other Indian artists who preserved "personal records of dying days" (Dunn, 1969: 7). They drew graphic portraits of the native life they knew, and depicted a complete cross section of the lives of their people, all strictly from the Indian point of view (Blish, 1967: 8).

> *"Plains Indians used signs, symbols and graphics to give directions, identify praiseworthy national figures, identify threatening enemies, depict the sources and symbols of authority and power, send love messages and emphasize group membership."*

The components of Plains pictographic art are abstractions, conventionalizations and symbols of their material and spiritual life. The forms of the paintings directly represent objects or concepts, but they also evoke responses. Firth believes the mental image evoked was the desired end-product of the material art form (1973: 46). This mental image was all-important in the schooling of Plains Indian children, particularly boys. Children grew up to constant exhortations to follow the examples set by their elders, and they were trained in the importance of adhering to custom. Boys learned behavior by imitating adult males. While too young to go to war with the men, they could still see what was expected of them in the numerous pictographic war scenes throughout the camp. This art form served as a means of expressing very concrete ideas of roles and goals. Stories were frequently told to explain each aspect of the paintings. By regular exposure to these scenes, with dramatic re-enactment, ritualized story-telling and audience approbation, it is likely that desire for similar expectations would result. These re-portrayals of adventures offered opportunities for community applause for the actor/heroes and must have been valuable lessons for impressionable boys eager for their own experiences.

"They drew what they saw and knew..."

In conclusion, the most interesting aspect of Plains pictographic painting is the clues which reveal the state of mind of the artists. They drew what they saw and knew and presented their work to the most potentially critical audience possible: their cultural contemporaries. These people drew themselves as they were, in the flash of color that belonged to their time.

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THE RUBIK CUBE: A POST NUCLEAR SYMBOL

by

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The topic is the Rubik's Cube, named for its creator Erno Rubik, the Hungarian teacher of architecture and design at the School for Commercial Artists in Budapest who patented his design in 1975. Quite independently and almost simultaneously, the same creative genius erupted in Japan, in a self-taught engineer-owner of a small iron works near Tokyo, Terotushi Ishige, who filed for a Japanese patent in 1976. "So", comments Douglas R. Hofstadter in *Scientific American* (March, 1981, pp. 20-39), "somehow the time was ripe."

Our post-nuclear age seems somehow to be responsible for the ripening, certainly for the dissemination of the idea. Sales of the puzzle peaked just about a year ago, November 1981, and *Time Magazine* reported in December that Rubik's design had sold more than ten million, and counterfeit versions by more than twenty manufacturing firms had sold millions more.

As a puzzle it sparked print publication. *The Simple Solution to Rubik's Cube* by a Stanford chemist, James Nourse, became Bantam's fastest selling item. Penguin Books (Puffin in England) brought out *You Can Do the Cube* by Patrick Bossert, a 13-year old London school boy, which rivalled it in millions of sales. Because of its general simplicity and arrowed directions, Bossert's book is my favorite among the dozens of publications which even include *Not Another Cube Book*, and *101 Uses for a Dead Cube*. A plastic cube smasher found 100,000 buyers, and who can quantify how many cubes ended up in garage sales and less noble junk as puzzle owners were annoyed or defeated by it. So much for the history of the cube-as-puzzle, solved in a technological age with speed and efficiency!

The cube, however, is more than a puzzle. Douglas Hofstadter (op. cit.) also termed Rubik's cube "an ingenious mechanical invention, a pastime, a learning tool, an inspiration, and a source of metaphors." It is within these categories that I set my talk for the 14th annual meeting of the International Visual Literacy Association, for I see the cube as a post-nuclear symbol.

Rubik's cube is a symbol for our planet, Earth. You see a cube, made up of 26 cubies; at first glance it would seem to be three slices of nine cubies each, but not so. There is no cubie in the center; that space is empty to accommodate the centers of the six faces, and these cubies have one color only; the twelve edge cubies have two colors each; and the eight corner cubies have three colors each Each of these cubies has a little foot that enables it to move while hanging together with the other cubies. The three axes (two horizontal and one vertical) do not actually intersect each other at a point.

If we can perceive the cube to be a stylized image of the planet Earth, with six different faces on its six surfaces, we can also conceive the invisible center to be a space, "an environment", that permits cooperative movements of the cubies, "the nations" that hold the planet together. I would call that center space, that "environment", the Space of the Invisible Creator of the Planet, or God.

Since I have no automobile, I depend on the city bus for transportation. In the weeks before Christmas last year, I was fascinated by the number of very young students--7 and 8-year olds--who spent the morning ride to school twiddling their Rubik's Cubes. One especially bright-eyed and skillful youngster shared the bus seat with me one morning, so I asked him, "Why do you like playing with the cube so much?"

Self-assured, he gave me a slightly mischievous smile and said, "Because it is something big people can't do."

That response started me musing over the view of the cube as a symbol for planet Earth, and I concluded he was absolutely right. Bringing peace and harmony to our planet was something big people had not yet mastered.

My musings went on to include observations from Carl Jung on the role of the universal unconscious; and Marshall McLuhan's insights into the unconscious way an individual's body aims at achieving a balance of sensory inputs. You remember the turbulent Sixties when sight and hearing were first bombarded with constant movies and television, radio, and stereo, and McLuhan coined his famous one-liner: "The medium is the message", and its counterpart: "The medium is the massage." "With the heightened input to those two senses," he said, "we should have expected the other senses to demand equal time . . . smell, taste, touch, movement . . . drugs, alcohol, nudity, sex, etc."

My musings continued. Although four centuries had passed since the work of Copernicus and Galileo, it was really only with the explosions of atom bombs at Hiroshima and Nagasaki that the Earth's populace began to see that the planet was about as fragile as a Christmas tree bauble--one mistake could reduce it to dust. Yet national leaders continued to make decisions appropriate to a flat-earth concept. The contrast between the game of chess, and the Rubik's Cube loomed.

Chess: two-dimensional, highly individualized, goal of the game is slaughter, and the slaughtered enemy drops off the side of the earth. In contrast, the Rubik's Cube is three-dimensional, corporate structures, (you can never move fewer than nine cubies at a time), the goal is harmony; and there is no way you drop your enemy off the side of the earth; you just meet him again on the other side.

Was it Jung's universal unconscious, and McLuhan's balance of sensory input that motivated people to purchase Rubik's Cubes in such numbers? Did they need, symbolically, to get their hands on a world they could manage? Did that help somehow to alleviate fear, impotence, helplessness?

The solution of the cube is complex; it demands patience and concentration; a specific strategy; a stable perspective; priorities; orderly procedure. But it is possible, and among certain portions of the population, millions did solve it. Would those same characteristics help solve the world's problems? Did confidence, hope, dedication, participation emerge?

Attitudes people took toward the Rubik's Cube began revealing some basic characteristics, or so it seemed to me. Those who solved the puzzle seemed to have positive attitudes: confidence, patience, orderly habits, responded to challenges, sought help and guidance when needed, liked a sense of achievement. Some, determined to "solve" the puzzle, even if it meant cheating a bit, took the cube apart and put it back together again, which is all right for a puzzle, but not applicable to the cube-as-earth symbol. Others, if they had a cheap one that made it easy to peel off the plastic covers did just that and stuck them back on the appropriate spots. We have all dealt with that sort of camouflage and propaganda in high places, and we know it does not really settle the world's problems.

Some others were defeated, but hid behind lame excuses: "That is a puzzle for kids." "I am too busy to bother with such trifles." "I haven't the temperament for it." "It is a ridiculous waste of time," etc. Others, defeated by it, reacted openly and with varying degrees of violence--some ignored it, some threw it away, some smashed it, and one at least went so far as to invent a smasher for others who were similarly defeated.

I noted a host of pleasant muddlers, who like big frogs in a small pond, settled for a one-surface solution, and were pleased as punch to see that their little surface was harmonious. In the planet symbol, such as these do not really even suspect that 5/6 of the world population lives basically different lives from their own; and their simplistic "solutions" to world problems are major stumbling blocks if they persist in trying to implement what their limited views propose.

Rubik's cube may help promote trust and understanding. In May, I was invited to a Conference of the Pacific Interfaith Citizenship Association of B. C. I will not say that it included every religious group from A to Z, but it came close. It began with Baha'i and Buddhists, went on through Catholics, Christians, Hindu, Islam . . . and more . . to Unitarians and Zoroastrianism. The common agreement was belief in a transcendent creator and equality among creatures. In one discussion, fears emerged about the possibility of younger children being able to persevere in the religion of their parents because of the pluralistic environment. I brought forth a cube ("I just happened to have one in my purse!") and indicated that if early training made the children aware of their "center", they could move all over the globe, philosophically, and still know where to come to rest. World travelers--whether of mind or body--often sum up their wanderings: "There is no place like home! Two teachers remarked: "I will use the cube in my classroom to get that idea across."

In June, I was invited to speak at a Conference of Christian Unity, where several hundred persons representing fourteen Christian denominations gathered. Again, I used the cube to illustrate that unity does not mean uniformity; that diversity enriches life, if harmony can prevail. It is by celebrating our unity, and respecting our diversity that real peace and love grow.

Again, at a brief talk at an Interfaith Service at Victoria's Folkfest, sponsored by the Intercultural Community Organization, on July 4, the cube was immediately accepted by the group as a good symbol of unity and peace.

In more intimate personal and family relationships where human frailties engender pain and discouragement, the cube can sometimes provide an external focal point for a principle that is hard to accept internally. For example, since all of us make mistakes sometimes, we need to learn a technique for dealing with mistakes, both our own, and the ones other people make. Using the cube as model, it is possible to point out that in the final solution, there is only one right place for each cubie, but a given situation in the cube may indicate jillions of twists and turns before everyone--or anyone--arrives at that final spot. On the other hand, it may be only one twist away, and someone needs only to have that one twist pointed out. So a working scheme might look like this:

1. Admit that there is a flaw, a mistake, or a change indicated.
2. Know that any change for one cubie impinges on at least nine, or more other cubies, depending on how you count.
3. Go with the flow, but do not abandon either your identity, or your final goal.
4. Observe your circumstances, and at the appropriate moment make your stand.
5. Do not despair.
6. THERE IS A SOLUTION.

Again a cube may be of some help in looking at personal identity and/or self-worth.

For that, the mathematicians' calculations may be of some considerable interest. They indicate that with the 26 cubies of Rubik's cube, there are 43.2 quintillian possible arrangements. Would you like that in the full display--with seventeen zeros in full array? You shall have it. 43,200,000,000,000,000,000 possible arrangements of 26 cubies of Rubik's cube! Can you begin to see the importance, and the need for each individual to search for self-knowledge, and for the proper niche in life? That may require dipping a little more deeply into Jung for self-knowledge, and for a little more of McLuhan to help you evaluate your environment, and a little more of religion and Scripture to learn the rewards of being true to oneself.

Further, that quintillian number represents several hundred times more units than there are people on the Earth at the present moment, and from that we can conclude our present human condition, whatever it may be, is not the result solely of our own actions. We may be enjoying a blessed peace because of the careful nurturing of several generations of ancestors. On the other hand, we may still be reeling from some wild abandon of ancestors several generations back. What efforts are we willing to put in to be truly ourselves, to reach our potential, and contribute to bringing Planet Earth to full fruition?

It might be useful to recall again that the cube has three distinct kinds of cubies: 6 centers, one color only; 12 side cubies, two colors each; 8

corner cubies, three colors each. No two cubies are alike. Each is absolutely distinct, unique. So is each person that has ever lived.

Until each has achieved full potential, harmony is still in process, but not yet complete. Yet one other comment must be made in this regard. In the cube, it is impossible to have just one cube of 26, in the wrong place or attitude. The minimum is two. What does that say about the need to associate with others?

The cube with magic squares on each face offers an interesting model in the field of economics. Harmony is achieved only in equal distribution around the globe, in the cube model. But it is possible to stack the cube so that one face may register a number value of 73, and another a number value of 17. One look at the cube shows how mixed up it all is in that arrangement. It would be interesting to bring that derivative of Rubik to the World Bank Meeting of the Board of Directors, or to the sessions of the International Monetary Fund. Other derivatives in shape and magnitude offer a corresponding variety of applications. But to Rubik goes the credit for the breakthrough for an idea whose time had come.

In addition to the physical and psychological world, Rubik's cube has interesting application for investigating aspects of the spiritual world. A paraphrase of I John 2:16 reads: There is nothing in the world but money, sex, and power. These items motivate all, or at least most, human beings to whatever there is of wisdom or folly in the records of literature, history, or Scripture. Some anthropologists roughly classify the growth stages of humans this way: from 15 to 35 years, the struggle is for a balance between the excesses and deficiencies of sex; from 35 to 55, the struggle is to achieve a mean between affluence and poverty--or a balance concerning money; after 65, the struggle is to come to grips with either the possession or the lack of power.

Mere chronological age, however, is no guarantee that one is moving from one stage to another. Large aggregates of humans battling fiercely--or succumbing consistently to any one of the three potent drives in humans will include all ages. News and entertainment media make appeals in all three areas for all ages.

It is possible that Rubik's cube, which at the moment is regarded principally as a puzzle to test speed and efficiency in young children, may yet become a meditation tool, where a few twists daily may help an adult take a reading on the degree of balance being achieved in the three major drives of personal and corporate life--money, sex, and power.

And who knows, the cubemeisters may yet outlast the chess players and the cube smashers, until we have at last a generation of dedicated people whose goal of peace, harmony, and love for planet Earth may be coming closer and closer to being solved. Here's to HOPE!

VISUAL CONFRONTATION IN WORKING WITH CHEMICALLY DEPENDENT ADOLESCENTS: A SYNOPSIS

by
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This was a slide presentation which detailed personal experiences in using the visual therapies in a treatment center for chemically dependent adolescents. An extensive series of slides, made from adolescents' drawings, was used to illustrate the meaning and diverse symptomatology of chemical dependency, and to document how spontaneous drawings help the chemically dependent child face up to the realities of illness.

Chemical dependency was defined first as a pathological or sick relationship of a person to a mood altering chemical substance, i.e. alcohol, pot, uppers, or downers, in expectation of a rewarding experience. The words noted here are "sick relationship". Chemically dependent people are intimately involved in something noxious and destructive, which adversely affects body, mind, and spirit, and which frequently causes problems at school, with the law, with family, and at work. Chemical dependency was described, further, as chronic and progressive. Like diabetes it is a disease that cannot be cured, only arrested; without intervention it is a disease that will end in death.

Chemical dependency was examined, finally, as a family illness. The statistics on alcoholism will serve to support this point. The approximately 10,000,000 alcoholics in the United States have approximately 27,000,000 children. Of these, 21,000,000 are between adolescent and preadolescent age. It has been shown that without intervention 40 per cent of these children will become alcoholic or chemically dependent. Many more will marry alcoholics. Experience of the author working in a treatment center tends to confirm these figures. Almost 50 per cent of the children who come into treatment come from families where chemical dependency has been a significant problem.

Chemical dependency has been called a family illness for a second reason as well. In treatment, one finds that whatever the symptoms and suffering of the child, the rest of the family members are experiencing similar symptoms, similar suffering. For example, almost always the child will demonstrate fairly quickly an obsession or mental preoccupation with drugs. This is observed in the form of "war stories", talking incessantly about what drugs s/he has used, how s/he has scored drugs, where s/he has scored, what has produced the best high. Similarly, the parents have a singular focus or obsession. Their preoccupation, however, is not with drugs but with their child--where s/he is, what s/he is doing, what kind of trouble s/he is in, what s/he is using, whether or not s/he is driving when s/he is high, etc. Symptom by symptom, the illness in the child parallels a developing illness in the family. Everyone's health is adversely affected. Everyone is in need of assistance. Like the mobile, shaken, tossed or blown, no part of the family remains unaffected.

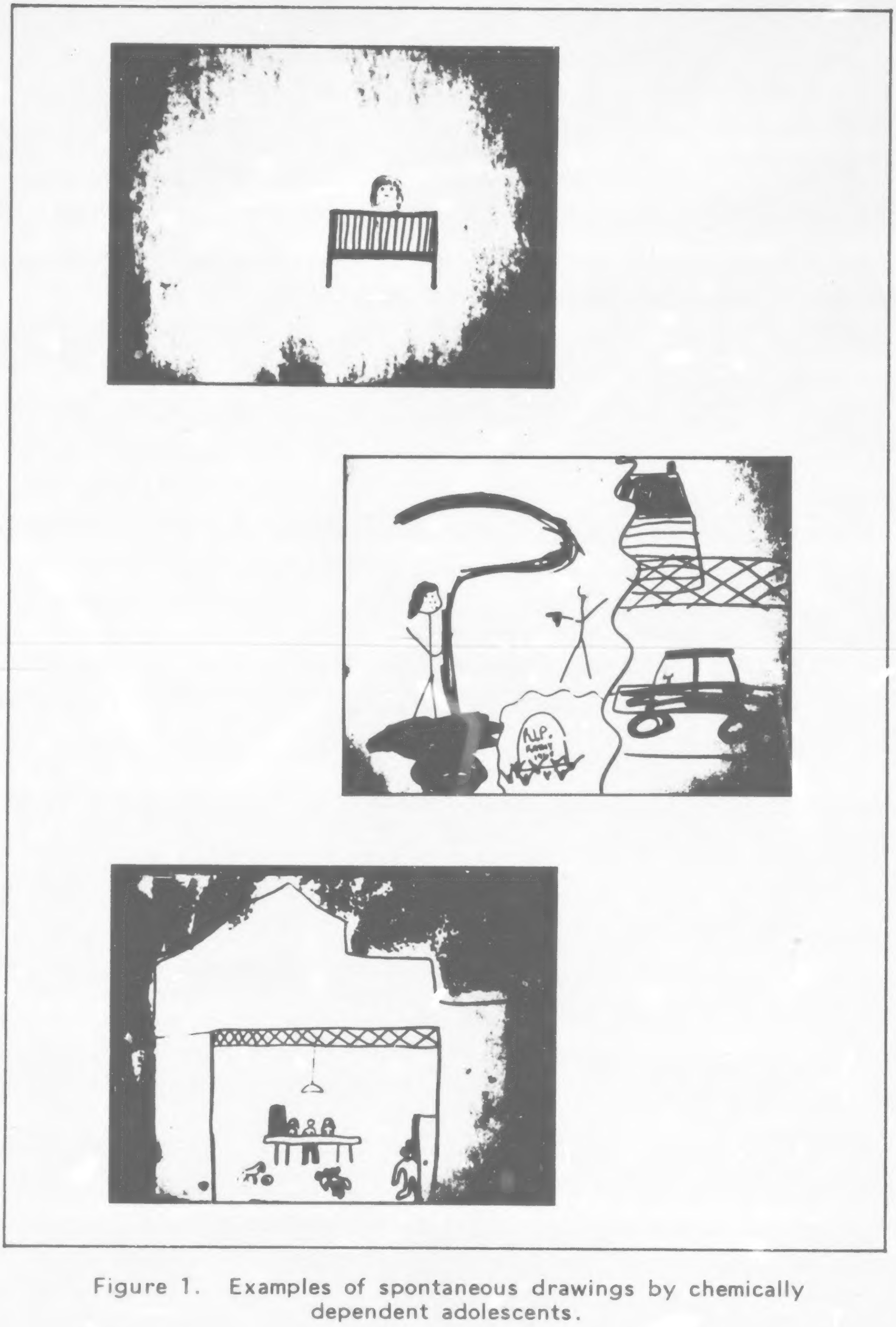

Figure 1. Examples of spontaneous drawings by chemically dependent adolescents.

Several of the most prevalent symptoms of chemical dependency were briefly addressed via the slides. The first such symptom was denial, that mental state in which a person is unable to look clearly or realistically at drug use or its consequences. It is a powerful defense mechanism which keeps the individual from looking at the painful truth of addiction. Other defenses such as minimizing, rationalizing, or intellectualizing about one's usage serve the same function of protecting the individual from a true and accurate picture of self.

A second prevalent symptom of chemical dependency is low self image, characterized by feelings of guilt, depression, inadequacy, shame, and suicidal despair. Sometimes the individual feels the pain of usage acutely. At other times, the first line of defense, denial, keeps the individual from feeling anything at all. A third major symptom of chemical dependency is a rigid negative attitude, characterized by feelings of anger, hostility, belligerence, resentment, and gloom.

> ***"Through the art process, the process of making a drawing or taking a photograph, the child spontaneously projects feeling states and fundamental conflicts onto the picture plane."***

It is essential, during the course of treatment, to provide youngsters with the opportunity to look clearly at these chemical dependency symptoms, to face up to the extent of their usage and its consequences. This demands an active confrontation between each child and the system of denial. The art process provides a primary vehicle for doing this. Through the art process, the process of making a drawing or taking a photograph, the child spontaneously projects feeling states and fundamental conflicts onto the picture plane. Whereas in group therapy the child often operates out of a thinking self, stating over and over again that there is no problem, that everything is going fine, the child's drawing expresses something fundamentally different. One sees in slide after slide, drawing after drawing, a portrait of the self marked by despair, shame, or guilt. Repeatedly the images are not subjected to the layers of denial, the self-protecting censors which the child's words represent. What one sees, what the child draws, is a truly spontaneous and honest accounting of self.

Whether the child is responding to the directive, "Draw your family doing something", or "Draw your first memory", or "Create a story with a beginning, a middle, and an end" the essence of the child's dilemma is portrayed via the art media. Consistently, primary, unconscious feelings dramatize the child's personal predicament. The art object is tangible. The child has a more difficult time denying the truth. And facing up to this truth is the primary task of treatment. Looking at the images, feeling their weight, is essential to recovery. The art image provides the data for change.

PROTO-CONVERSATIONS: COMMUNICATION STRATEGIES OF THE HEARING IMPAIRED INFANT

by

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In recent years the use of signing as a mode of communication has become very widely accepted in programs for educating hearing impaired children. However, the inclusion of signing has not been a simple process. For a number of years it was felt that the use of signing for communication in the schools would positively harm hearing impaired children. Both linguists and educators believed that the sign language used by deaf adults was simply a pidgin form of English rather like the English used by Indians in old western movies. "Me follow Lone Ranger to ranch. Me hide behind barn. Wait for man come out with gun." The primary reason for this perception was that the type of signing used by deaf people when communicating with hearing people was more or less a pidgin signed English system (Stokoe, 1980). English was considered to be the high prestige language and when deaf people would communicate with hearing people they would attempt to shape their signs into an English system--using English grammar and vocabulary as much as possible. The outcome was a pidgin English sign system. What linguists and educators did not realize was that there was actually another very different language being used by hearing impaired people among themselves, a language quite different from English. This language, labelled American Sign Language (ASL) does have differences from oral languages, but is in no sense a pidgin language, and is in fact as complete and rich a language as any other.

I will give a few examples illustrating some of the differences between American Sign Language and English. One important thing to note is that signing languages do the same things that oral systems do--they ask questions, express pluralization, note time, and so forth--but how these features are expressed capitalizes on the visual nature of the communication. For example in English when we express a yes/no question we use a rising intonation: "Is she here?" For a who question we use the grammatical structure "Who's that?" in some circumstances and the rising intonation in others: "Who?" When signing, these question forms are expressed through specific facial expressions with the yes/no question expressed by a raised eyebrow and the who question with the squeezed brow (Baker & Cokely, 1980).

"For many parents telling them they must sign to their child for communication is equivalent to telling monolingual users of English that only French can be used to speak to their child."

Another example is the way in which the plural can be expressed. In English the plural is expressed primarily in the nouns. "I gave books to the two boys." Notice the plural marker on the words "books" and "boys". In ASL the plurality is marked on the verb with the movement of "give" being repeated twice, or if there are several boys who have received the books the verb may be repeated several times (Klima & Bellugi).

Another example of how signing takes advantage of the fact that it is transmitted visually is through expressions such as the following. Spoken languages by their very nature are linear--that is they are expressed one sound after another and one word after another, as in the sentence "The boat moved slowly across the waters." Granted the sentence evokes a singular internal visual representation, but it must be expressed sequentially and linearly. Signing, however, can take advantage of its visual aspect and present the concept more simultaneously by cupping hands, as in the sign for boat, and moving them in front of the body in the manner of the boat's movement (Baker & Cokely, 1980).

While a description of American Sign Language is of considerable importance, educators of hearing impaired children are aware that the hearing impaired child is facing an environment for learning language that is quite different than for the hearing child. For one thing the hearing child is exposed to the language he will use for social and educational purposes from birth. Since only 10% of deaf children have deaf parents, few deaf children are exposed for some time to the language they will eventually utilize (Moores, 1978). Even if the child is identified in infancy as deaf, the parent must then learn to sign. For many parents telling them they must sign to their child for communication is equivalent to telling monolingual users of English that only French can be used to speak to their child. Many hearing impaired children then begin their lives in a very impoverished linguistic environment. The linguistic situation is further complicated for the deaf child because that child is growing up in a situation which will require proficiency in not just one language but two. His social group will more than likely use a dialect of American Sign Language, while the larger society will demand proficiency in English for educational and vocational purposes. The hearing impaired child often ends up being exposed to three types of signing--a dialect of American Sign Language, a pidgin signed system used by most hearing adults, and a signing system used in the schools designed to be parallel to English. Given the hearing impaired child's limited input, especially during the early years, accompanied by the unusual linguistic environment, the question arises concerning just how the hearing impaired child does learn to communicate.

To begin to answer this question it is necessary to examine the developing language of the hearing impaired child. The study presented here is the beginning phase of a ten-year longitudinal project examining the developing language of the hearing impaired child from the point of identification. The information gained from describing the language development of hearing children is used as a basis for this investigation. This study is being conducted at Infant Hearing Resource (IHR) in Portland, Oregon. IHR is a parent-infant education program for hearing impaired infants and their families. There are at the present time six children involved in this study--four hearing impaired and two hearing children. Five of the sets of parents are hearing with one set of parents of one of the hearing impaired infants being hearing impaired themselves. The hearing impaired children have all been diagnosed as having severe to profound losses. The children all entered the study before they had their first word or sign. The youngest child was four months, the oldest 18 months, but at the six month level developmentally.

There is no doubt that it would have been desirable to have begun the study when the children were newborn. The reason is because of how much has been learned recently concerning the early communication skills of the infant, that in fact genuine two-way communication does begin to take place between the mother and the child during the early days of the child's life (Brazelton, Kowslowski & Main, 1974; Bruner, 1975; Collis, 1979; Trevarthan, 1979). These early communication interchanges have been labelled proto-conversations, because it has been found that they do not contain the essential elements of conversation (Bateson, 1971).

Proto-conversations have been described in detail by Tronick, Als and Adamson (1979). What occurs during these conversations is that first the mother gains the child's attention by one or a combination of the following: moving into the infant's line of vision, smiling brightly, tapping the child, rocking the baby or cooing. If the child focuses attention on the mother, she will then smile brightly and begin presenting rhythmic vocalization to the infant. At this point the infant and mother might begin to engage in what are described as pause-burst patterns. These patterns consist of a movement and/or vocalization followed by a momentary pause. Why these are considered to be conversational is that the pause-burst activities are generally done in a turn-taking pattern. The mother is active, then pauses. During her pause the child is active, then pauses with the mother being active during that pause. This pattern is very similar to the pattern used by adults in conversations with one another. The proto-conversations are ended by a process of disengagement usually with either the mother or baby looking away.

While there are a number of aspects to these conversations, two are of particular importance. One has to do with rhythm. In the work done by Condon (1974), it was found that when newborn infants were awake and alert they would often move their bodies in rhythm with the language spoken in their presence, even if the baby could not see the speaker. This phenomenon is not confined to infants, as it has been observed in adults speaking to one another. A further aspect of rhythm that we see in infant conversations is that much of the communication behavior of both the parent and the infant is quite rhythmical, whether it be vocalizing, tapping, waving or rocking (Fridman, 1980).

A second aspect of these conversations worth noting is the case of imitation on the part of both the parent and the infant. We see the partners imitate each other's movements, facial expressions, vocalizations and rhythmical patterns. Sometimes these imitations are sequential, sometimes simultaneous (Trevarthan, 1974).

What we looked for in our hearing impaired infants was whether proto-conversations occurred and what role rhythm and imitation might play in those conversations. We were likewise interested in determining what the effect of the parents beginning to learn to sign might have on these conversations. Data were obtained from the families by video taping the infants and their parents playing together. These video-tapes, about a half-hour in length, were taken once a month in the infants' homes. The video-tapes were transcribed into a paper and pencil format. The transcriptions included such features as eye gaze, body position, facial expression, gestures, vocalization and signs. It has of course been necessary to include in the transcriptions descriptions of American Sign Language linguistic features, English features and linguistic markers, such as cooing, that are more or less confined to conversations with infants.

"The proto-conversations between the parents and the children in our project were incredibly rich and productive."

Let me say at the outset that the proto-conversations between the parents and the children in our project were incredibly rich and productive. In fact these conversations did not appear to differ much from the conversations between hearing children and their parents except when certain kinds of behavior were looked for.

The first thing that was very noticeable when viewing the video-tapes was how rhythmical the behavior was when the parent and child were communicating. The following is an example of just such a movement. The mother took a block and banged it on a box six times, very rhythmically. Then the baby swatted at the box using the same rhythm as the mother had used. The mother, while the baby was swatting at the box, again started banging the block in rhythm with her child's movement. This type of rhythmical movement and rhythmical imitation was a very frequent occurrence. Another example was when one father began singing "ba ba ba" and the child began to simultaneously imitate the movement she observed and then continued the movement after her father had stopped. The youngster, after mimicking the movement four times, also began to vocalize with the movement.

The rhythmic behavior appeared to play an extremely important role in the conversations. It was used by our parents, as it is by other parents, to engage the child's attention (for example, by tapping the youngster), to cue the child into a familiar play sequence (for example, bouncing a toy across the table), to check whether the child is as interested in a specific game and to continue the conversation through imitating the child's behavior. Rhythmic behavior was sometimes started in one mode, such as vocalizing, and then imitated by the other partner in another mode, such as tapping.

It became apparent in observing the video-tapes that another type of rhythmical behavior was of some importance. This is the type of rhythmical behavior that takes place within an individual. For example, you will see the parent tapping, vocalizing, and nodding her head all at the same time. This provided the hearing impaired infant who could not hear vocalizations, more than one cue that meaningful, rhythmical communication was taking place. The parent may be looking intently into the child's face, smiling, moving her mouth and tapping the baby's arm all at the same time. The child, though deaf, would become familiar with this pattern using pauses in movements as conversation cues. The child would often wait until the mother's movement was finished, before beginning his own movement. When given this many cues the child seldom interrupted the mother's movement, waiting until she had finished. One exception to this was when the child began to imitate the mother's behavior. The child would sometimes begin the imitation pattern while the mother was still talking (as the mother may do with the child).

One example of how sensitive the child is to these visual cues is a pattern we observed with our one child who has hearing impaired parents. The parents nearly always signed to the baby when talking to her. If they had the baby's attention she would watch them intently when they were signing to her. Both of the parents, when they had finished whatever they were signing to the baby, would drop their hands into their laps, accompanied by a slight lowering of the shoulders. The youngster at six months of age was so in tune to this cue that she would instantly drop her eyes to her toy or whatever she was playing with when she saw the parents drop their hands into their laps.

It is probably worth noting that we saw one example where turn-taking failed, which was a real irritant to the parent. One of the mothers would from time to time begin to talk to her child, calling his name fairly sharply while she was out of the child's visual range. The child, because he was not attending to his mother auditorally or visually, would continue what he was doing and from time to time would even begin to vocalize midway through the mother's utterance. The mother would react to this interruption with annoyance. It is unclear if she realized what was annoying her.

The fundamental role of this rhythmical behavior as the basis for successful communication just can't be overestimated. It is reminiscent of the story of a hearing person in a car turning on the radio to listen to the news. The passenger in the car, a deaf person, begins to tap to the rhythm, thinking what he is hearing is music. It would seem that the rhythmical aspect is fundamental to human communication functioning, no matter what mode of communication is being used.

One area of interest is the parents' incorporation of signing as part of their communication strategies. We have been particularly interested in determining if such incorporation interferes with the rhythmical communication pattern. Two of the four families were new signers, one family decided not to use signing with their child, and the fourth family, because the parents were hearing impaired, had used signing for some time. The two mothers who were new were quite different in the ease with which they incorporated signing. One mother seldom got flustered. Signs that she knew she generally included easily and freely in her play. When she did not know a sign she did not worry about it. She just used nothing and continued talking and playing with her youngster. On the whole, the signing on her part did not seem to interfere with her conversation. As for the child's response to the mother's input, we saw that about the time he first started pointing, he also began to occasionally use a twisting movement with his hand when he was in conversation with somebody, a movement I have never seen a hearing child produce.

The other mother appeared to be less easy with signing, using signs less frequently, at least while she was being video-taped. When she did use signs, they were not always well-coordinated with her on-going dialogue. What would happen would be that a look would go across her face as if to say, "Uh oh. I'd better use a sign." Then she would tend to rear back a little, get a very serious look on her face, and then use the sign. She would then lean forward, soften her face into her communication mode, and carry on with her communication. By the way, this was not the only time when we saw this particular movement. The parents in the program have been told that one way to encourage their children to vocalize is to imitate the child's vocalizations. Most of the time the parents did this very unconsciously and the imitation was very much integrated with their other play imitation patterns. However, occasionally you would see that the parent "remembered" that s/he was supposed to imitate. We would see the same kind of slight rearing back and stiffening of expression for this contrived, non-conversational imitation. Another place we see a similar movement is when teachers are using a pattern for correcting a hearing impaired child's utterance. The teacher's face will become expressionless, s/he will rear back a little and give the pattern s/he wishes the child to imitate. When s/he is satisfied with the child's utterance the shoulders are relaxed and the face softened, letting the child know it is now okay to go on with the conversation.

Our infants all seemed to be attentive to the signing in one way or another. The child with the deaf parents paid the most attention, usually looking at the parent's face or hands until the signed message was completed. The other two children would not always wait until the signed communication was completed. We often saw, however, that if the child were looking at the parent's face and the parent started signing, the child would very briefly glance at the moving hands. We did not often see the children watching the hands through an entire message. They may, however, watch the face or at least keep the signs within their peripheral vision.

To sum up our observations to this point, it appears that the communication strategies used by hearing impaired infants and their parents differ little from that of hearing infants. The communication is very successful, very normal appearing. Conversations that are rewarding and fun take place between the parent and the child. While all of the children vocalized, vocalization was simply not the major carrying factor in these conversations. After observing the tapes, it became quite obvious why the absence of the auditory component did not, at this stage of development, cause serious disruptions in the communication process. Most of the communication takes place face-to-face with the child, with a few notable exceptions. Moreover, the parent does not talk to the baby with a bland face. The parent gives many visual and tactile cues to the baby each time s/he says something. While the introduction of signing does cause some interference in the communication process, this interference does not overwhelm conversation. The parents and children in our study all had established very complex, rich and rewarding conversational routines. It appears that communication between the deaf infants and their parents is very similar to that of hearing children, thus providing the infant with a sound basis for communication development.

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PHOTOGRAPHY: A PICTURE OF LEARNING

by

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Introduction

When I was in college I had the opportunity to study in France and thereby to explore the nuances of my first alternative language. One of the words which struck me--because it expresses a concept not available in English--was "l'esprit". My French mother used the word often and always with a brilliance in her eye and an eloquence of tongue which illustrated the dual meaning of spirit and mind perfectly. "L'esprit" is a key word for me, as a photographer, teacher and consultant interested in the integration of art, education and the psychological/spiritual journey.

I teach the literal skills of photography: seeing, exposing, developing, enlarging, and creating the final print. These five stages, while they have educational and creative value in their own right, also provide a metaphor for stages in the creative process of learning. As we engage in a metaphoric process, we learn while we are also learning how to learn.

Learning I am defining in the broad sense. As we are educated--or led out--we are being formed. We are being created as we create. Our learning, when it is real, always involves our whole selves; it is always "therapeutic". So, while I am careful to remember that I speak as an educator and not as a therapist, I also am searching for a holistic, integrated approach to learning--one which involves "the thinking heart and the feeling mind".

Students come to me with primarily technical, left brain concerns. Yet because technique has always been the vehicle for me and not the destination, my classes are really about seeing.

Seekers come with many different degrees of learning success. I began by teaching "normal" students who led me to try my learning approach with disabled children. I have gone on to work with brain-injured and developmentally disabled people, both children and adults. I teach elementary students, gifted high school students, and M.A. candidates at a local college. I have come to the conclusion that we are all handicapped in certain ways, and so my process remains essentially the same for all populations. Despite minor alterations, the constant goal is to tie the outer world to the inner one.

I want to share something about the five stages of the process, giving samples of exercises which can be altered or developed for personal or professional use. It is not necessary to be a photographer or a photography teacher to use pieces of the method, or to incorporate its spirit into another discipline.

Seeing

The first step to seeing anew seems to involve noticing that we need to. When we are encased in an attitude that our experience is already complete, our lenses are so firmly in place that new visions are impossible.

As we travel and reach new stages in our lives--new lands--we all experience a kind of culture shock, a disorientation as old learning styles fail to work. When we adapt and invent a new way to decode, once again we can see. Once such a leap has taken place, we've learned how to learn. We are motivated to use ourselves as growers, achievers, problem solvers, creators, givers and lovers.

Only sometimes it doesn't work that way. For various reasons, we become handicapped. Some handicaps are visible and have names. Others, like learning disabilities, are invisible and have names. Others--handicaps belonging to "normal" people--are invisible and nameless. Betty Edwards has coined one "disartistica." Whatever the cause or the manifestation, we can all grow in our ability to see more broadly and deeply.

Seeing is the first step towards transformation, whether we are looking for a way out of a terrible crisis, designing a new insulation material for a roofing company, helping an aphasic develop an alternative language, or trying to avert nuclear war.

There are three eyes which I try to develop through photography classes: the physical eye, the inner eye, and the mechanical or photographic eye. To integrate them is to achieve a vision which will translate to non-photographic areas.

Before the word "photograph" is even mentioned, the goal is to establish consciousness of the physical sense of vision. Gifted students love to know "the facts of the eye," including the brain's central role in decoding patterns of light. We explore together our peripheral vision, our perception of movement and time, our focusing abilities, and our perception of shapes and colors, by sharing common seeing experiences. I take most students on a walk. We compare our seeing, then take the walk again, seeing again. With gifted and disabled students alike, sensory integration experience can be awakened quickly as we touch bark, feel the wind and do what Perls calls "losing our minds and coming to our senses". It is a good way to assess together how much learning and how much blocking is occurring in the sensory experience.

"The inner eye can be stretched and warmed up with guided imagery exercises."

The inner eye can be stretched and warmed up with guided imagery exercises. I use Samuels' Seeing With the Mind's Eye, among other resources, to create ways to strengthen a student's ability to picture geometric shapes, three dimensional objects, a room from childhood, a red balloon which changes shapes, moves and transforms itself into different colors--and eventually to "re-member" how to picture places and companions of our own invention.

In a group situation I choose a common experience--like a recent rainstorm. We list volumes of free associations, noting the broad range. Then we notice the categories of these associations, which usually begin on a rather literal level and progress to aspects of mood, personal memory, and other filing systems of the brain. Then to each individual I suggest,

> Relax. Close your eyes. Let your own favorite associations flow in front of your inner eye, forming a vision which has to do with our common subject. See how naturally the ingredients compose themselves if you do not censor. This is an inner photograph. It has formal elements; notice the shapes and the light and dark values. It is a story form; let it speak to you, completing the sentence, 'I am about . . . ' It has, like a dream, symbolic content, based on personal memories and current hopes; feel the emotional content.

Then I ask each person to draw and write about the experience, and to keep the paper to see how it relates to later parts of the process.

When it is time to approach photographic seeing, energies usually turn toward de-mystifying the black box, and seeing ourselves as capable of handling the mysteries of the f/stop. Then we are free to go on to such issues as reducing the three dimensional world to two, the peripheral vision to a rectangle, and the world of movement to a single frame. As we learn this subtractive process, we are acquiring the lingua of a new medium, an alternative language.

Learning to read photographs in a small group is a delightful experience of sharing. Each person leafs through a book of photographs and chooses three to share and discuss with the group. The brain-injured, aphasic, or developmentally disabled student can speak by projecting his or her own aesthetic, emotional, and intellectual values onto a photograph. The gifted student can use the non-verbal language to share what he or she sees but cannot explain.

A brain-injured woman who had formerly been a potter selected a Karsh portrait of Henry Moore with a piece of his sculpture. She explained in halting but eloquent words, "It shows that the work of art is eternal, but the man is not."

Just as eloquent was the selection made by a man who had been rendered speechless by a traumatic brain injury, and whose coordination was too poor to sign or gesture. He chose a Gary Winograd photograph of a dog taking another dog for a walk. The whole group got the joke, laughed, and felt the revelation of a "new sense of humor in the room."

The gestalt experience is exhilarating. When knowledge feels complete, when we see and know at the same time, when the two halves of ourselves work together, we feel whole. "Right brain" seeing must have a place for translation; the seeing of the 'three eyes' must have a place to integrate.

I find the keeping of a journal to be an invaluable tool in the seeing process. It is a place to record the adventures of the outer eye and the inner eye, and their conversations with each other. I ask all my students to keep a journal, and that request is met with varying degrees of enthusiasm.

This is not the place for a detailed account of journal keeping techniques, but my approach is based on the conviction that the only rule should be no rules. Extremely verbal people benefit from some structure. Language-poor elementary school Hispanic students in East Los Angeles can keep a journal, if its form can include photographs and drawings. If the journal can function like a Montessori room, full of equipment to be used at the learner's pace and moment of choice, right has a chance to be wedded to left, the invisible to the visible, the inner to the outer.

Exposing

The second stage of the process is exposure, which has both a photographic and a personal aspect.

". . . students are much more anxious about failing technically than they are about failing creatively."

The technical side involves more de-mystification of concepts like depth of field and exposing for the shadows, and the notion of getting the right amount of light on to the piece of acetate inside the camera. It also involves a fair degree of anxiety for most people. It seems that the more educated and logical the student is, the more anxiety there is regarding mechanical abilities. It is interesting to me that students are much more anxious about failing technically than they are about failing creatively. I try to use this period to point out these anxieties (which usually echo old fears about math or logical abilities) and to provide a right-brained navigational approach toward getting to know the camera.

The personal side of exposure involves the decision to pick up the camera, to trip the shutter at a given place, angle, and moment. As we make that decision, we say, "Yes!" and reveal our way of seeing. When we involve ourselves in a creative pursuit, we commit to a certain journey of skill mastery. Simultaneously we commit to a certain journey of self-exposure, or risk.

The exposure stage can be compared to a quest, a venture of "discovery." Part of its success involves venturing out to see, to read, to be, and to take photographs. "Take a roll of anything you see" is the first instruction. The first proof sheet has in every case resulted in a unique seeing style, even if art training is absent and technical controls are marginal.

A developmentally disabled student of mine who perseverated (obsessively talked about certain subjects to the point of losing contact with the listener) was "stuck" on the subject of police and fire departments. On our first photographic walk, he could find nothing to photograph except the rather dramatic image of a padlock on a gate. I got the message and decided to follow his lead instead of trying to create an exit of my own. In one hour at the fire department, he took 40 photographs. If the quest is to express the student's vision, the teacher must be an humble follower, I discovered.

The same student, now in love with photography, went on to spend untold numbers of rolls of film and flash bars on photographs of segments of his room. He then created two similar series which resembled puzzle pieces of my studio, and then of his neighborhood. The non-aesthetic nature of his photography was somewhat disturbing to his mother, until she saw that his photographic exposures were illustrations of the way he saw his world--a perseverated, disjointed one devoid of the object constancy most of us take for granted. Later, when he arranged those pictures in an album, perhaps he was symbolically beginning a reconstruction of his world.

Although I do give some traditional assignments for exposing the camera's ability to see (such as a treasure hunt for pictures of motion, texture, shape, tone, line) I primarily assign exposure exercises designed to break down the traditional labels of our seeing. Try pretending you are from Mars, and the only record you can take back to your planet of life on earth will consist of 10 photographs you will take within the next half hour.

Then we progress to more inner-directed exposure. List 10 kinds of photographs you'd like to take if you only had today. Pick the three you'd least like to give away. From the three, choose one. Now, go inside yourself. Close your eyes. Relax your physical, intellectual and emotional defenses. See a scene of your favorite photograph. Let it compose itself, refine itself into the strongest photograph possible of that subject. Explore it as an inner photograph with formal elements of design. Explore it as a story in which you can participate, to the level of feeling the sensual elements in it, and seeing the frames which may have preceded it, or which may follow it. Then explore it as waking dream material, full of symbolism and emotional content which relates to your present life. Now return to the world enough to draw it and write about it. From your experience, derive the formal elements you are seeing now, the story elements which interest you now, and the emotional/spiritual content which is part of you now. Create a self assignment which has to do with these elements. This is not a new exercise; it is simply making conscious the process of the artist.

In the exposure stage, we talk about portraits functioning as exposures of both the subject and photographer. Even first graders know what it means to take a picture of a friend, with the only rule being that the picture must be true.

Try seeing a portrait in your mind's eye--of your mother. Close your eyes and let her come into focus, surrounded by whatever objects or living things which should accompany her. Notice her body position, the tension or lack of it. What does it say? What is she doing? Where is she? Where are you? How do you feel? Notice how acute your vision is with this inner eye. Notice that this photographic portrait is the portrait of a relationship. When you take any portrait, fix the technical concerns in your mind ahead of time so that you can be open to responding to all the other factors which may "come to light."

Developing

In the photographic sense, developing or processing means learning how to load exposed film on to a reel in the dark, placing it in a light-tight tank, and then pouring chemical baths into that tank. At this stage the processor is in the light, but the development is happening in the dark, invisibly. There a latent image, coded in flecks of silver hidden in the film, is being transformed into a visible image by a means we cannot see any better than we can peek at a seed breaking open in the ground.

At this stage, metaphorically we are at a stage of the creative learning process which partly takes place in the hidden dark container of the unconscious. We have seen and we have acted on our seeing; now we are waiting for the results, waiting to see a de-coded image.

Part of my current work involves trying to understand the brain as alchemist, processor of outer and inner experiences. The right brain knows things which, when processed into a form like language, become a structure or a paradigm. During the developing stage, we are waiting to understand what we have already seen at a deep level.

Marilyn Ferguson comments that being between paradigms is "like being between trapezes." It is "like being Linus and having your blanket in the drier." Medievally speaking, it is "like being between castles, in no man's land."

Dyslexia, according to the parent of a student of mine, means literally, "I cannot tell you." The "elephant man" says it eloquently in the movie form of his story: "Sometimes I think my head is so big because it is so full of dreams. Do you know what happens when dreams cannot get out? Something must."

We get them out through language, the facility of the left brain. For those whose left brain facility is limited, or for those who find themselves in life situations for which there are no words, a miracle is occurring. As Brain/Mind Bulletin put it, "Split brain researchers did for the right cerebral hemisphere what Annie Sullivan did for Helen Keller. They devised ways of releasing a profound but mute intelligence."

"When the usual self-expressive modes are blocked, we creatively adapt, inventing alternative languages."

When the usual self-expressive modes are blocked, we creatively adapt, inventing alternative languages. If drama is the only avenue, perhaps we act out pain and inner division through an alcoholism or drug addiction, or crime, or political or relational problems to illustrate our inner state.

Evelyn Virshup and Virginia Rothman are two Los Angeles art therapists who have devised ways of teaching art in a whole brain style which is especially healing for those who have experienced frustration in a left brain world. The right brain does speak--in its own language of visual symbols.

Consider Sharon, the brain-injured woman who had been the potter. She took a photograph of a stone wall at her learning center. When I asked her to close her eyes and picture a related scene, she saw herself walking along a beach covered with stones. They were left there, she said, in the wake of a huge storm which had destroyed everything. She was walking barefoot, and the stones hurt. She knew she had the option of stooping to pick one up, but "didn't know whether it was worth it." The leaders of the center told me she had been depresed about her accident, but had been unable to discuss it.

Learning in the broad sense is deep and complex, and its development is still a mystery. Jung points out the need to look at the shadow along with the light. Plato believed man doesn't learn, but "remembers" what he has learned before his present incarnation. And Ann Sullivan says in The Story of Helen Keller, "The child has dormant within him, when he comes into the world, all the experiences of the race. These experiences are like photographic negatives, until language develops them and brings out the memory traces."

Trusting the unconscious, valuing affective as well as cognitive learning, finding ways to understand the language of the right brain--these are growing concerns among educators today. When the unconscious becomes conscious and is brought to light, two ways of knowing unite in a gestalt experience. Helen Keller had forgotten the word "water," the only word she had spoken before her illness, until she experienced water, flowing from the pump on to her hand. When she linked the sensory to the cognitive and said the word "water," that gestalt freed her to enlarge her world by leaps and bounds.

Enlarging

In the darkroom we work under safelights, filtering out white light except as we allow it to pass through a negative onto a photo-sensitive piece of paper. As we learn the skills of controlling that light, we see the paper--coded with a latent image--transformed in a new set of chemicals. The latent image comes to light, in positive, readable form. The sense of magic is akin to seeing one's first seed emerge from the soil, transformed into a green living thing. Both experiences are the result of what we have done, and also belong to a process we can only partly understand.

As students learn, to whatever degree they can, the craft involved in darkroom techniques, a sense of mastery emerges along with some fine prints. Learning disabled and brain-injured people suffer great pain from a feeling of lack of control of themselves and the environment; this is one area of the environment they have learned to affect. Suddenly the magic is more than magic; the print is also a result of mastery.

Once we know that the product comes from us, we can see how in our work we reveal or discover ourselves. First of all, in art we are making the product for ourselves, for our own creative pleasure and not to meet someone else's expectations. Therefore, each decision about size, scope, cropping, paper, and contrast reveals our own aesthetic and intellectual values--values we sometimes did not realize we had. The owning of our own values and creative power can make a dramatic difference in our learning and living capabilities.

Once the product is literally in the light, its nature is available for us to interpret once again. I stress that I do not work as a therapist, but I do offer "image enhancement" techniques which allow each student to talk about work at whatever level feels comfortable.

Bob, a brain-injured student of mine, took a photograph of a plant. It was an ordinary enlargement until he and I saw it in context with his other imagery experiences. In the exercise on reading photographs, Bob had picked a bare torso shot of Bruce Jenner, commenting and gesturing, "Strong." Later, as we both looked at Bob's plant picture, I asked him to close his eyes and imagine a scene created by the photograph. As he deeply relaxed, I could see movement under his eyelids, and though his speech only contained single words, his body spoke in an expressive way. "Earth" he said first. Then, "Seed. Plant. Grow. GROW!" Then, I asked him to open his eyes, look at his photograph again, and tell me its title. "Robertson," he said. Robertson is Bob's last name.

Bob's expressions may have reflected some grief about his own lost strength, but they also seemed full of hope. Today he is speaking in sentences. Of course we have no way to measure the value of his photographic and imagery experiences in that language process, but it is safe to say they did not hurt.

When we bring things to light, they often bring out pain, but also solutions. Ferguson comments, "We have millions of opportunities brilliantly designed as problems." Penicillin is her prime example. Is it a killer virus or a healer? It's all in the perception. She goes on to point out that we can only base a paradigm on what we've seen before. We can throw away the sensory impression that the earth is flat because at least we have seen a globe.

Imagery work is being widely discussed and selectively used in educational circles today, because of rapidly expanding research about the role of the image in learning.

Inner imagery allows us to return to our center, and so to work out from a place where we feel secure. It is no surprise that meditation exercises have been helpful for school children with behavior and learning problems.

Imagery can enlarge our memory capability. In Robert Ludlum's novel The Bourne Identity, Jason Bourne, injured and amnesiac, pieces his identity together by trusting the flashes of imagery, the memory traces which come to him coded in mental pictures. Imagery helps us "re-member" ourselves, or "re-cognize" ourselves; as we make images we are trusting that the puzzle pieces are contributing to our own enlargement. Much is not understood about how memories are stored and retrieved, but Gray's recent model of the brain points out that if we indeed file and retrieve under headings of emotions rather than facts, we had better stretch and use the power of the right brain.

> *"The right hemisphere can tolerate things changing form, becoming paradoxical, revealing metaphor. Without that flexibility, our learning becomes a one-dimensional useless collection of possessions."*

The right hemisphere can tolerate things changing form, becoming paradoxical, revealing metaphor. Without that flexibility, our learning becomes a one-dimensional useless collection of possessions. Saint-Exupery once said that the word "like" is a bridge between two objects. Our trouble is that sometimes we can't find the bridge, and the mind must leap to create one. Crossing from right to left, from creative to technical, from outer to inner, helps us learn to build those bridges.

Finally, the participation in transforming a potential product into a real one changes us in a subtle way which I believe is extremely potent. As we watch a blank piece of paper offer a changing image of our own creation up before our very eyes, somehow all things become possible. Transformation becomes real, just as it does when we learn to dance, or make a wonderful sauce, or finish a hard hike. Art is a way of showing us prints of not only what we see, but how we see, that we can see, and that people have the power to transform themselves.

The Final Print

Creating the final print is a stage of synthesizing the four preceding stages. It is paradoxically both a wedding and a separation, for in presenting it we offer a product which is now the world's as well as our own. If we respect this kind of sharing act, we teach ourselves and our students to respect the product.

Photographically, I teach my students to retouch, perhaps hand color or tone their photograph, possibly write something to accompany it, mount the piece or mat it, sign it, and frame and hang it. Often we mount a show in the window of the studio, and I catch students bringing parents and friends by to see their work.

In respecting the product, we respect our act of seeing, our linking of the inner and outer worlds. We can see the link now, in the form of our own new creation taken from the world and "photosynthesized" through the use of light into a new and growing thing.

As we review what we have created, we can benefit from a kind of "photo-feedback." Now we can see what we saw, and notice whether we have already seen some new things to add. The process is not over, of course. This is commencement, not graduation. Like re-reading a journal, one's own photographs is a way of measuring growth as sure as the pencil marks on a wall record a child's growing body. We can see our own fears and tensions as well as our own joy and love, and honor all of them in the valuing of all our work.

Pride in the final product is important for all kinds of students. I personally don't think it's really the product, even though we all feel it is when we've just finished one. I think what we fall in love with is love itself, the feeling that we are both creatures and creators.

To insure that the final print is a result of linking inner to outer, we try to evaluate it by checking whether we worked through each stage from the inside out. One way to do that is through a dialogue-with-work technique I teach all my students before they create final prints. The technique is reminiscent of Progoff's journal writing technique of dialoguing with part of oneself. The student gathers proof sheets and work prints and (in solitude) asks that work: "What do you want to become? Who are you? What do you have to say? What size do you want to be?" The dialogue can be written, and then referred to along the way.

The implication of that technique is that our work has a life of its own, a voice of its own, and that its voice is often deeper than our own conscious thought. If we base our decisions on conscious thought, we can end up blaming either good or bad work on luck, or teaching, or circumstances. If we base decisions on the deepest voice we can hear, then we take the risk of having to accept ourselves.

The acceptance of oneself is probably non-measurable, and so perhaps are the results of the teaching method I have briefly described. I can say that some students say they see the world differently. Grades have gone up. Speech and language skills have improved. Self-esteem seems to have been enhanced.

Sometimes "the final print" is only a clarity about what needs to be begun. Peter, the developmentally disabled student who liked fire engines, never could progress with me to owning and expressing emotions of his own. I once suggested that he act out different emotions and take pictures of them. The only one he would act out was "happy," explaining that when you're happy, things "turn out better." I had nothing against happiness, but I did suspect that a history of multiple serious injuries, hospitalizations, special schools and probable rejections from the "normal" world would produce some other emotions.

Repression of our emotional growth impedes our cognitive progress, Gray's brain research said to me. Feelings, Gray maintains, precede thought. Until our emotions are clarified for our own labelling, our thoughts remain chaotic, undifferentiated blurs. As I began to learn more about Peter's family, their complexity and pain began to emerge, and it became clear that they all suffered some emotional overlay due to Peter's problems and their reactions to them.

I always suspected that Peter wished that a fireman could rescue him, and perhaps that rescue may begin now, as the parents have begun to explore therapy and other ways to strengthen their own communication. The mother, having admitted that there has been no discussion with Peter about the memories and feelings which must lie dormant, has suggested that she look for a gentle therapist who may begin to help him untangle the web which clouds his potential.

Conclusion

The linking of disciplines is certainly part of the "final print" for the future. We are in an era where poetry is being compared to physics. We are listening to research reports that children naturally have the ability to see auras, but lose that ability as they acculturate. We live in a world where Karl Pribram is rejoicing that "for the first time in 300 years, science is admitting spiritual values into its explorations."

We stand at the frontier of inner space. The hologram, Pribram's model of the brain, the resurgence of studies on paranormal perception and spiritual healing--all these are part of a tremendous wave of "new seeing" which will transform us and demand our fullest awareness, our widest eyes, our most open minds. Exposed to the "futureshock" of rapidly expanding technology and consciousness, we will all go through our own stages of re-learning many times over. Probably (and perhaps fortunately) the "final print" of the human mind will never hang on a wall. But we can say that the psychotechnologies reunite our two consciousnesses, so that we may see into the new dimension.

An entry point into new consciousness can be anything that gives a glimpse of a new way of seeing, or being. Photography is not a panacea. It simply has several advantages as a vehicle. First, it offers the paradoxical experience of experiencing limits and expansion simultaneously. It is a subtractive exercise in which through restricting three dimensions to two, we can sometimes catch a glimpse of a fourth. Through framing, we can sometimes expand our view to the limitless. Through a mechanical tool, we can choose to explore the organic, and through committing to a discipline we can explore freedom of expression.

Secondly, photography is a natural vehicle for this age, because it is so culturally acceptable. Susan Sontag points out that it is almost unthinkable not to record one's life experiences photographically. While Sontag deals with that fact critically, I prefer to turn it to an advantage.

Thirdly, photography is supposedly logical and technical. Advertisers would have us all believe that if we buy the right camera, our pictures will be done for us. That too can be an advantage, in that the left brain needs something to keep it busy. Give it all the technical material to worry about and free the right brain for seeing, and gradually the photographer will wake up to the fact that photography is more personal than he or she had assumed. The very fact that photography is regarded by most people as a technical pursuit provides an educational opportunity.

Finally, photography is a medium of light. Light has long been regarded as a symbol of knowledge and of spiritual and physical health. Indeed x-ray, the laser, and radiation are just some examples of the uses of light--a form of energy--in the healing process. Meditation and visualization techniques are grounded in the belief that even the imaging of light can heal. Religious art and writing through the centuries has dealt with the issue of capturing or staying in the light, of honoring it as a source of life and growth. Mystical and mysterious questions are surfacing all over the world about the nature of energy, and about our latent abilities to use it to heal ourselves. So, if the technical aspects of photography pleases the mind, the basic quality of the medium probably pleases the spirit.

The prophets of the future aren't going to be people who have one-dimensional knowledge. They will be people who, like the child in The Emperor's New Clothes, know which invisible things are true and which are fantasy. As for the educational system, as Ferguson says, "doing it harder isn't going to work any better". Educators and psychologists--and all of us--will hopefully learn to combine the material view with the spiritual one, helping to heal our eyesight, helping to nurture our ability to educate the mind, "l'esprit."

We are all pioneers.

THE FAMILY PHOTO ALBUM AS ICON: A FAMILY SYSTEMS APPROACH TO READING PHOTOGRAPHS

by
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> In your vision of the world
> is the image of your self.
> Morgan

A family systems approach to reading photographs is concerned with the information photographs convey about the family system, what the album communicates about the family relationship process and what it means to be a person, a man, a woman, a boy, a girl, in the family (Entin, 1981). The theory is an organizing framework to help individuals understand the part each family member plays in the operation of the relationship system. By learning how to read photographs using the concept of Bowen Family Systems Theory, it then becomes possible to observe and interpret photographs and albums more sensitively to better understand one's personal and family history. The principle that guides my thinking is "How can the concepts of Bowen Family Systems Theory be operationalized and conveyed visually?" This is the subject of this paper.

Bowen Family Systems Theory

Bowen Family Systems Theory describes and conceptualizes the family relationship system and the variables that affect its changing patterns and processes over time. Physical, social and emotional dysfunctioning are symptoms of disturbance in the family emotional process. The theory deals with the facts (who, what, where, when and how) of the family. The important interlocking concepts include: 1) triangles; 2) nuclear family process (manifest through emotional distance, marital conflict, spouse dysfunction via emotional, physical or social symptoms), and/or impairment of children; 3) family projection process; 4) differentiation of self; 5) multigenerational transmission process; 6) emotional cutoff; 7) sibling position; and 8) societal emotional process.

A detailed presentation of Bowen Family Systems Theory is beyond the scope of this paper. Several concepts of the theory will be presented as illustrative of ways they may be manifest or inferred in photographs. A more general theoretical discussion of the application of the theory to the study of photographs and family albums is presented in "Photo Therapy: Family Albums and Multigenerational Portraits" (Entin, 1980), "Family Icons: Photographs in Family Therapy" (Entin, 1982), and "The Family Photo Albums as Icon: Photographs in Family Psychotherapy" (Entin, 1983). A more comprehensive exposition of family systems theory and psychotherapy can be obtained from the writings of Murray Bowen, M.D. (1971,1972,1976), especially his book *Family Therapy in Clinical Practice* (1978), and "Family Systems Theory and Therapy" by Kerr (1981).

Once these concepts are understood, ideas for their interpretation and translation into visual images will suggest themselves. The application of the concepts to the observation and reading of family albums are extensions of the theory. The theory is a guide to think about the photographs: there are no direct translations or correspondences between the theory and photographs. Similarly, "There is no generalized, one-to-one correspondence between what is present in the photograph and a fact or interpretation about this or any other family" (Entin, 1982). Some concepts may be directly observed and some inferred, while others may not be capable of translation into physical or visual imagery.

The examples that follow show how the concepts of family systems theory can be operationalized for the observation of photograph albums. As such, they are neither definitive nor exhaustive, but indicative of the manner in which the technique flows from the theory. Photographs can be read many times and in many ways to communicate the wealth of information they contain: the examples can be used to interpret and illustrate several different concepts simultaneously. The samples are provided to stimulate creative thinking about how the concepts of family systems theory may be applied to the observation of relationship patterns in the family in the study of photographs and family photo albums.

A Family Systems Theory Approach to Reading Photographs

Triangles

Triangles deal with emotional closeness and distance between two individuals and the role of a third person (or issue/object) in that relationship. The patterns of interaction of the twosome in the relationship determines how anxiety is handled in the relationship. In triangles there are two insiders and one outsider. During periods of calm, the inside position is preferred. During periods of high tension and stress, the outside position is preferred, since the position is relatively free from the anxiety of the twosome. In times of low stress, the insiders are relatively close and the outsider feels isolated. "The calm or harmony in one relationship can be maintained by the conflict in another relationship" (Kerr, 1981, p. 242).

Triangles can be observed in pictures by studying the spatial closeness-distance aspects of relationships as potentially mirroring the emotional. The accumulation of repeated images helps to differentiate between more temporary alliances and patterns and more characteristic relationship patterns. Some leads for questions and observations of pictures include:

- Who are the people involved?
- How are they grouped?

- Who is touching/close to whom? Is one person always in the center of the photograph?

- Is one person always off to one side?

- What position are the children in?

- Is the oldest/middle/youngest always in the "favored" position between the parents?

- Is your mother/father (in-law) hovering over you or your spouse?

The information from a single photograph might be overinterpreted since it might reflect only the mood of the moment. Hence pictures over a period of time have to be studied. In answering the above questions, it is important to attempt to differentiate temporary from characteristic patterns and look for flexibility and variety in patterns and groupings. Fixed patterns, someone always off alone, apart from the family, may be indicative of a close, overinvolved relationship between two family members and an emotionally distant, isolated third member of a triangular pattern. In contrast, where these patterns of relationships may not be as apparent in the pictures, perhaps where there is more variety in the way the family poses and who stands next to whom changes frequently, the photographs reflect a family relationship pattern which is more adaptive. It is important for the individual looking at the photographs within this framework to raise enough questions about the observations of the photographs to confirm or invalidate the developing hypotheses about the relationship patterns.

A successful woman executive examined photographs of her family taken when she was growing up. Particularly striking was a series depicting her parents, older brother and herself. In each, her mother held her, her brother stood close by leaning towards them, while her father, dressed like "out of the bandbox" always in a three piece suit with his hands in his pockets, stood physically isolated from the family. Tears came to her eyes as she discussed the emotional distance between her father and herself and the impossibility she felt of ever being able to get close to him or discuss important issues affecting her life with him. The same triangle pattern of distance with her husband and overinvolvement with her young daughter exists (Entin, 1983).

In another family a middle-aged woman complained of her continuing distance from her husband and her feeling of alienation from her older sister. She perceived her husband and sister as having a close relationship. These feelings were heightened during her older sister's visit (from a distant city) at Christmas. Photographs had been taken during the visit and the client was eager to show them because, for a change, she liked how she looked in them, "that was a nice picture of me, one of the few . . . I can't believe I said that." In a picture taken by her husband, she was sitting on the couch with her sister and commented about the photograph and the relationship:

> Well, there is a lot of distance between us, except for our knees, isn't there? But we seem to be having a really good time, and I guess that's why I like these pictures . . . and we're laughing a

lot, that's real important. I noticed that I have my hands clasped together between my knees . . . (What does that mean?) . . . I don't know, closed in a way . maybe it could mean that part of me is open to my sister and part of me is closed.

She had taken a picture of her husband and sister, on the same couch, but "I wanted to get the Christmas tree in" and, in so doing, shifted the vantage point to take the picture. The resulting image reflected the relationship: the arm of the sofa functioned as a barrier between her and them. In the photograph, she creates and maintains barriers to mirror the emotional distance she experiences in all her relationships (Entin, 1982).

Differentiation of Self

The concept of the differentiation of self attempts to conceptualize all human functioning on a continuum, a continuum called the scale of differentiation. It defines how people are different with regard to managing issues of thinking versus feeling, individuality versus togetherness. People who live their lives in a feeling world, for whom the forces of togetherness (fusion) dominate, are at the lower end of the scale. With increasingly higher levels of differentiation, there is more of a balance between these opposing forces, both systems become more separately defined and less reactive to each other

The concept of a scale of differentiation has been mainly of theoretical, rather than empirical, importance. As such, it is difficult to operationalize visibly and directly in a photograph. Creative interpretations may permit the inference of this important concept.

An anonymous portrait of Sigmund Freud and his five sisters and a brother may serve as an example. The caption published with it interprets his position and stance in the photograph as "the reserve and distance evidenced in the portrait are said to be consistent with Freud's later statements about his childhood" (Anonymous, 1979, p.13). An alternative explanation suggests that Freud was less involved in the family togetherness and consequently able to achieve a more optimal level of differentiation, a level of well defined individual functioning that would enable him to conceptualize about psychological development in a way that had not been done before him.

The lack of a differentiated relationship between a mother and professionally successful adult son was reflected in a series of photographs of the family. The man often faced his mother with a sad and longing look in his eyes. In one photograph he was actually on one knee, a seeming supplicant, his hands holding his mother's hands, with his mother in the center of the photograph and his whole extended family, including his new (and third) wife surrounding them. Emotional fusion was an obvious inference. This was supported by his current wife's statements that he was still very dependent on his mother, wanted desperately to please her and to prove to her that he was a "good boy" (Entin, 1983).

At this time one can only speculate as to whether spaces between family members reflect distancing maneuvers or a family system that permits differentiation of its members. It may depend, also, on the point of view of the family member looking at and interpreting the picture.

It is interesting to speculate as to how a less differentiated, or emotionally fused, family might assemble a photo album as compared with a more differentiated, less togetherness oriented, family. It appears that a less differentiated family, perhaps vulnerable under stress to more anxiety, may assemble an album with a unitary point of view. This thematic expression is highlighted in "The Perfect Family (Album)" assembled by a woman who was terminally ill as a present to her young adult daughter (Entin, 1982). It showed the aspects of the family and the characteristics the mother perceived as important. There were no photos of the mother and daughter, a striking example of the distance and lack of relationship between them.

Emotional Cutoff

The concept of emotional cutoff describes one way people deal with unresolved togetherness (fusion) in their family of origin. This can typically be done through emotional cutting off or physical distance from the family, and/or withdrawal or avoidance of emotionally charged issues while with the family.

In looking at albums it is, then, also extremely important to take into account the people who are not in the picture, in addition to those who are photographed. What does a person's absence mean? During adolescence, individuals attempt to seek their own individuality and may deal with the family togetherness by cutting off from parents. This may occur in varying degrees of intensity ranging from long hair and blue jeans, emotional turmoil, acting out behavior via emotional cutoffs from the family, or running away from home. The photo albums may provide clues as to the ways the relationship problems were dealt with in the family. Typically, during periods of family stress, conflict or crisis, there is a sharp decrease in the number of pictures taken. Obvious gaps may reveal times of family crisis, or the absence of an expected or significant figure may be attributable to an illness, hospitalization or emotional cutoff, and an inference may be made about the operation of the family emotional process. These assumptions, however, should be validated through discussions with family members. If there are many pictures of a particular child and then suddenly photos of that child are conspicuous by their absence, this could be indicative of a cutoff. Did a change in weight, dramatically graphic in photographs, reflect other changes in the family? Perhaps the "camera shy" child also reflects such emotional upsets. A vivid portrayal of a cutoff is a photograph where an individual is "cutoff" (cut out) of the picture. This demonstrates that cutoffs do not "solve" the problems because the individual "cut off" is still there (present by the absence) and, therefore, the cutoff continues to exist until the issues are resolved (Entin, 1982).

In a similar manner the family life cycle may be studied through the photo album. What is chosen to be photographed, recorded and documented for the album reflects the ideals, traditions and values of the family. Significant information is provided by looking at nodal events, ceremonies and rites of passage over time, noting changes in who is present and who is absent. This provides evidence of possible emotional cutoffs, as well as attempts to reestablish contacts, in families. "(W)ho appears at which event" is "not accidental" according to Friedman (1980, p. 432) in a discussion of the way families deal with ceremonies relating to transitions and rites of passage. These occasions provide individuals with the opportunity to reenter the family and reestablish contacts with distant relatives or close relatives who are distant for the purpose of dealing with the issues which may have contributed to the cutoff.

The Family Photo Album as Icon

The focus of this paper has been on some of the manifold ways that the concepts of Bowen Family Systems Theory may be manifest or inferred in photographs and family albums. By learning how to "read" photographs using the concepts of family systems theory, it then becomes possible to observe and interpret albums more sensitively to understand better one's own personal and family history. They visually articulate the meaning of the relationships of the family while serving as landmarks for a history of continuity and change within the multigenerational family portrait. Their significance over and above the images renders the family photo album as icon.

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THE USE OF STILL PHOTOGRAPHY AS LEARNING ASSISTANCE FOR THE LANGUAGE HANDICAPPED IN THE CLASSROOM

by

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When still photography was invented by Daguerre a century and a half ago, his wildest imagination would probably have failed him in envisioning the frontiers reached by his invention today. The marriage between audio and the visual media seems to have injected life into the world of photography. For example, there are videotapes, movies, and large format home televisions to name only a few. A child can tune in or tune out of the myriad of programs available. Now leisure hours may be as challenged by video games as they were in the past by outdoor sports. Parents today are probably using more home movies and video tapes rather than still photography to record their children's milestones through life. Some may even be looking ahead to using holography for a three-dimensional effect. Schools are reasonably well equipped to educate the child with the aid of such approaches. The question that arises after considering the animated walking and talking media is whether there is any room for still photography in today's classroom.

For the last thirteen years, my work with the trainable mentally handicapped, the learning disabled students, and the children learning English as a second language has provided me with excellent opportunities to test the different modes of visual teaching. While films, video, and television provide much general knowledge, good entertainment, and the continuous sequential progression of an event, it is the still photograph which provides a student a quiet moment to stand and stare, to pause and study, to reflect and to contemplate, and to make decisions that alter "feeling, thinking, and acting." A photograph is a tangible artifact which can be touched, held, arranged with other photographs, rearranged, kept for long periods or destroyed, all at the choice of the subject and/or photographer.

Photography is of considerable value in providing assistance in learning situations. It is specially useful to the students who are handicapped in language development for one reason or the other. Consider a child, Sunil, who had arrived from India only a week before school opened in September. He could speak little English but was duly enrolled in a regular grade one class which was appropriate according to his age. On the first day he was assisted through the routine carefully. The necessary procedures were explained to the class in English. From then on, Sunil was expected to follow the routine with reasonable independence and accuracy. For example, the teacher told the children to hang up their jackets and then to sit in a circle. Simple analysis can tell us that Sunil probably had caught two words--jacket and sit--and so half an hour later, he was still sitting in the cloakroom. There are ways of giving visual references to overcome such breakdown in communication. A series of pictures may be used to help the children overcome the strangeness of the first few days at school. Photographs can be

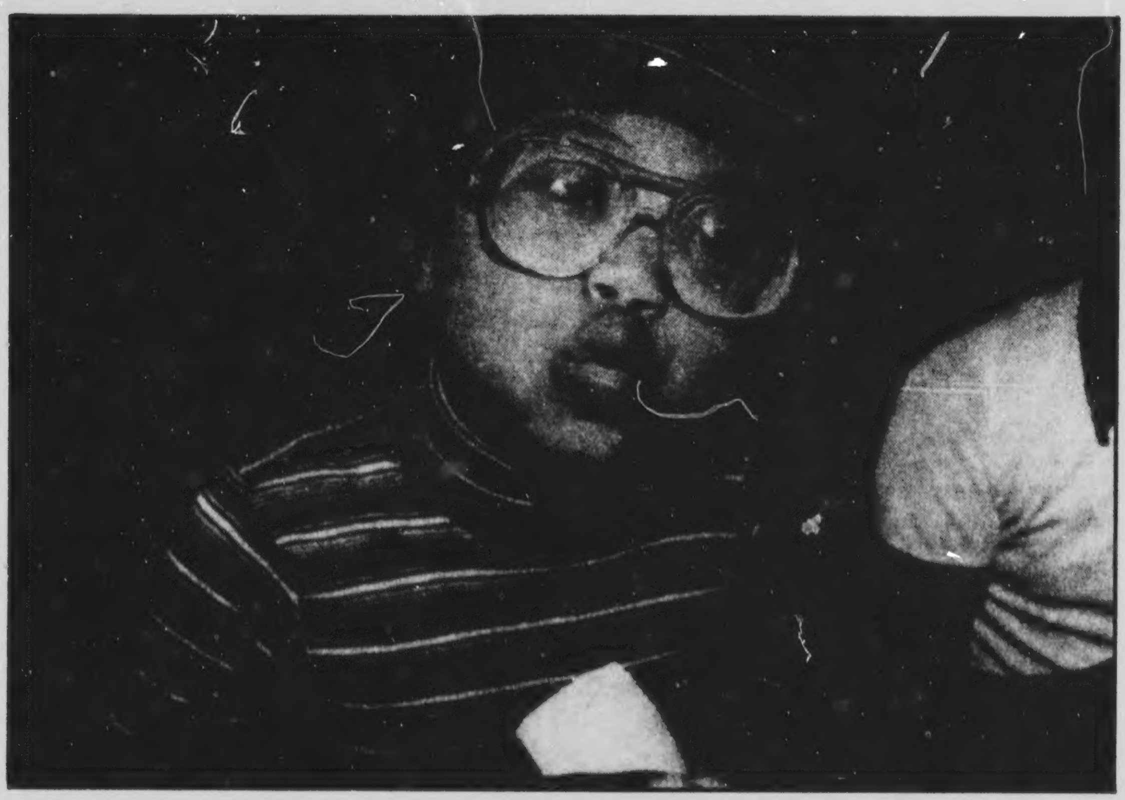

Figure 1. Typical photograph used for literal reading of "oo" sound.

used in literal, inferential and associational modes to teach and/or to enrich a child's knowledge (Figure 1).

Literal Uses of Photographs

Initially, with young children, photographs may be used for literal readings for identifying the content of the photographs. The contents may be varied according to the subject's experience and knowledge and by the material to be taught. Objects can be identified, labelled and grouped together for classification into different categories. Photos may be personalized for developing an awareness of one's body image. Photos may be used in conjunction with tape recorders, thus using a multi-modal approach.

Inferential Uses of Photographs

As the child gains knowledge and individual understanding, inferences can be made from photographs (Figure 2). Discussion can be led into recognizing feelings and needs. For example, an unhappy looking face may be used for understanding causes, effects and remedies. A picture of a poorly groomed person can become the focus of the attributes that make a person properly groomed. Self-awareness is developed by noticing the differences in

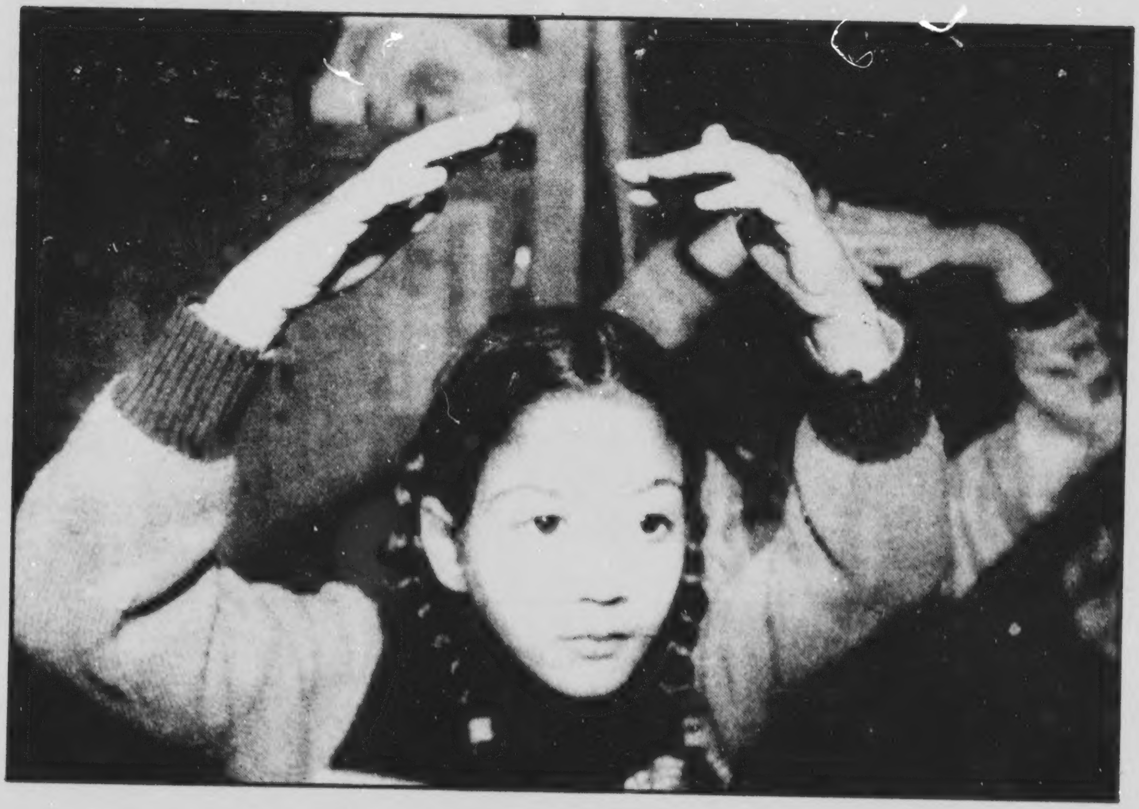

Figure 2. Typical photograph used for drawing inferences about awareness of one's body image.

the picture taken before the change and the picture taken after the change. Communication includes miming, dramatizing, drawing and story-writing, sign language, and, of course, oral discussion.

Behavioral changes may also be brought about with the use of photos, because they permit a child to study the picture in privacy and then to exercise "control from within" where it is needed. For example, one child was photographed lying in fetal position, deliberately closing out the external world. Verbal instruction had proved ineffectual in changing the behavior, and it was not until the child had seen the photographs that this practice was discontinued.

The method of drawing inferences has also proved successful in improving the work habits of the class as a whole. Young children often indulge in trying out the limits to which they can digress from the expected classroom behavior before they are reprimanded. Mild disruptive behavior such as aimless walking, talking, and interrupting is not unusual. However, in some circumstances such behaviors take up valuable teaching and learning time. A small project was implemented in a grade one class. Photographs were taken recording both positive and negative activities. The children were able to see the pictures without the involvement of the teacher. Then phototherapy sessions were held:

Some photographs were placed face down and the following questions were asked:

1. Where were the pictures taken?
2. What do you think you may see in the picture you have?
3. What do you wish to see?

The photographs were turned over to show the pictures and these questions were asked:

1. Has your wish come true?
2. Do you want to trade your picture with another person to make your wish come true?
3. How many people have the same wish? (consensus)
4. Would you like to group together to share the same wish? (Nucleus group)
5. If your wish has not come true, would you like it to come true?
6. What is the teacher's wish? (relating to the class performance, it could be giving time out or stickers, or any other item for the satisfactory completion of work.)
7. Draw your picture to make your wish come true.
8. Write the text: "My wish was that I . . . My wish came true."

No mention was made of the actual behavior or the need to change. The "attention seeker" received attention positively and the ultimate goal was accomplished by drawing inferences rather than by direct comments upon the behavior.

Associational Uses of Photographs

When photographs are used for teaching by association, the child learns to identify or to associate personally with some aspect of the content or reference made by the photograph. Pictures of facial expressions, showing emotions such as happiness, anger, sadness, and surprise, can be shared with children who may be unable to express their feelings or are shy enough to withhold exhibiting such expressions. Self-modeling, peer modeling (Figure 3), teacher or parent modeling provide an excellent means of associating with ideas beyond the content of the photograph itself. A picture of the bus used to take the children to a farm is sufficient to trigger a "discussion" on the topic of field trips. A picture of a child with a book could easily lead one to recall other reading experiences perhaps at home or at the local library. Imagine the associations a child can make upon seeing a friend blowing out a birthday candle. Endless learning opportunities become possible to the child as photos are shared with others.

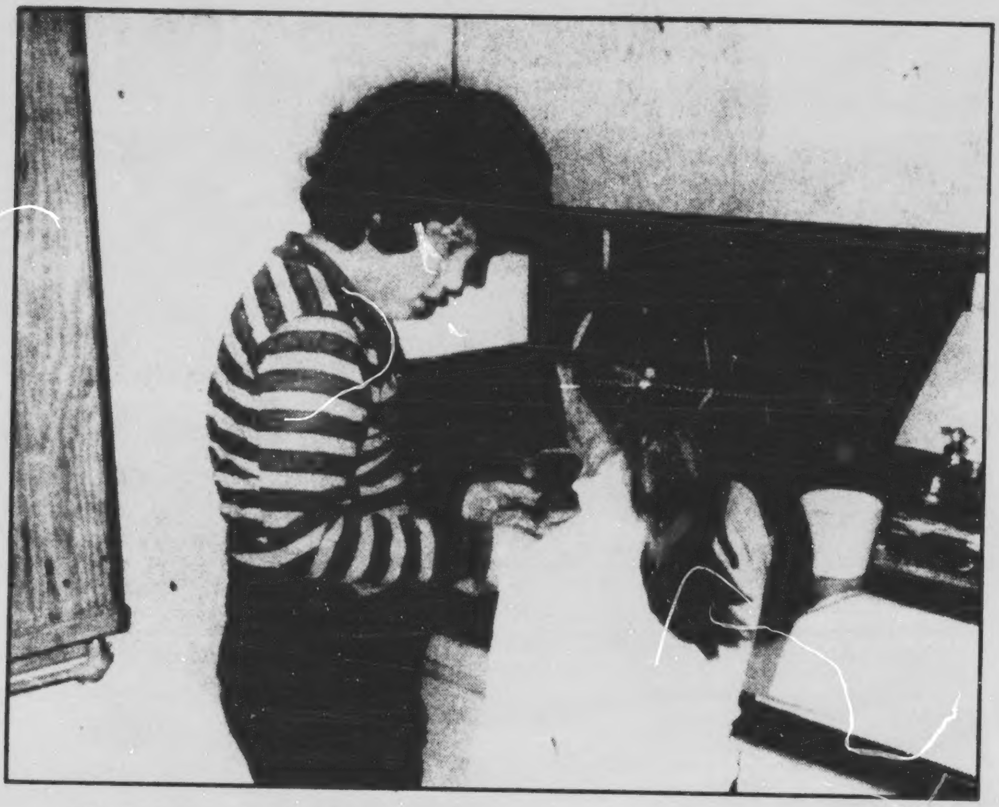

Figure 3. Typical photograph used for teaching association.

This presentation barely touches upon the use of still photographs as learning assistance for the child who is handicapped by language and verbal communication. It was shown that photographs can reach beyond the limitations of speech so that learning continues to take place effectively.

VISUALIZATION IN RESEARCH, THEORY, AND TECHNOLOGY

The papers in this section easily could have been grouped into one, two, or three sections. We chose to lump them all together. Much overlap exists between research, theory, and technology. Every piece of good research has a basis in theory, although not every theoretical statement culminates in research. Technology provides tools for research and the fuel for theory. As the sub-categories spill over into each other we note common attributes among the authors. They share a sense of inquiry, speculation, and change. With that kind of bond, essays and experiments can share space in the same section.

Betty Nickerson, whose inspirational keynote address featured fascinating examples of children's art from around the world, also conducted a creativity workshop. From that workshop comes her theoretical model of Uthenics with its implications for curriculum change. Hortin also emphasizes education in presenting a theory of visual rehearsal for improved teaching effectiveness. Working together, deLeeuw, Eshpeter, and Carswell seek to provide further help for educators by adapting a language model to categorize the photographic work of adults and children. McIsaac uses a different categorization scheme to determine how people interpret photographs, emphasizing cultural implications.

Two approaches to improved written communication are described by Hardin and Braden. Hardin investigates communicative effectiveness of instructional diagrams, and Braden explores the symbiotic relationship between the visual aspects of graphic displays and their verbal messages.

Increasing interest in technology leads Metallinos, Kaller, and Bringolf to look at research techniques and measuring devices used by disciplines such as the physiological, neurological, and psychological sciences and to speculate upon the potential of new visualization devices for the future.

The new high technologies which offer us computers and television also inspired several of our authors. Hutton sees the technological revolution as an opportunity to remake the world and urges visually literate information professionals to asume a leadership role. On a lighter note, Montgomery relates the joys of computer programming. Ragan and Blitch connect the computer language LOGO with a fresh view of visual literacy and report on a summer computer camp experience.

Computers, as well as television, provide for Dubinsky a new ordering of space which ties technology more closely to a social context. Fryrear uses the technology of video recording and playback for human relations training. All of the major concerns noted above are addressed by Love and Acheson in their review of field trials of Telidon, in which social, educational, and technological factors are studied.

IMAGERY IN OUR DAILY LIVES

by

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Images play an important role in our democratic society. At one time in the past people reacted to their environment and especially external images as a natural part of their reality. Today people do not accept without question the external images that confront them. They know that sophisticated technology and mass media can be used to manipulate and deceive them. People know they can no longer trust every image and are skeptical of the image-makers and their powerful medium, television. Many people now believe that they need to study, question, and evaluate the external images of daily life.

Besides the external images of daily life, people also create internal images in their minds to help them code and store information and remember experiences. Just as people are skeptical of the external images of society, people who rarely use imagery or do not rely heavily on internal images are skeptical that anyone thinks visually. Visualizers and verbalizers live in different sensory worlds. A good imager can store memories of sounds, pictures, smells, tastes and kinesthetic behavior long after the event. The enjoyment of music, reading, conversation, art, nature, and sports can be remembered and enhanced through imagery. The taste and aroma of wine, for example, can serve as a cue to moments past, evoking several images that include a special restaurant, day, person, trip, or occasion. These internal images are elusive, transporting people in their dreams or daydreams to scenes, dramas and places beyond their conscious reality, and these internal images can play tricks on people just as the external images do. Through drugs or brain chemistry, people can be misled by their inner images.

> ***"One important aspect of visual literacy involves the use of internal images of the mind to help people prepare for future experiences, to solve problems, to appreciate the visual world and to think critically about images that confront them daily."***

Images of the mind are also ubiquitous, sometimes lying below the level of consciousness and surfacing at just the right cue. One important aspect of visual literacy involves the use of these internal images of the mind to help people prepare for future experiences, to solve problems, to appreciate the visual world and to think critically about images that confront them daily. By visually and verbally rehearsing in the mind what one is going to do before doing it, a person can build self-confidence before performing the actual experience. Persons also can "see" themselves practicing or "doing" behavior before the actual experience in order to prepare mentally and look for alternative, more creative ways of performing. Actors, sports people, dancers, lecturers, and people who demonstrate skills or tasks often practice some mental rehearsal before they go through the actual experience.

A person can also learn to experience and enjoy visual events, whether they be external or internal. The external images a person sees arouse interest, motivate, trigger memories, and produce emotional effects. However, not all people "read" the same images in the same way. What one person sees may be interpreted and understood differently by another person. Loftus (1979,1980) has written extensively on individual differences in eyewitness accounts. Loftus (1979) found that two kinds of information go into a person's memory from an event. One kind is information received during the actual event and the second is "external" information added by the eyewitness after the event. Loftus (1979) wrote, "Over time, information from these two sources may be integrated in such a way that we are unable to tell from which source some specific detail is recalled" (p.78). The external information enters into the memory of the eyewitness or viewer through interrogation, media coverage, conversation, interpretation and reflection after the event.

A person's visual literacy determines the internal representations of what is seen. Those who are more visually literate are better adept at creating useful and insightful internal representations. Through training and practice, a person can improve the ability to use internal images.

Internal images are very personal representations. For instance, in Salvador Dali's painting, "The Slave Market with Disappearing Bust of Voltaire," there is an image either of two nuns or of a bust of Voltaire in the center of the painting. The viewer can see the image either way by simply willing to do so. With proper training and practice, the viewer can easily perform the capacity to choose one hidden image over another, more obvious image. People make these choices all the time; unconsciously, a person chooses, sorts through and deletes visual information.

People asked to think aloud or describe their behavior as they solve problems find themselves verbalizing, analyzing, visualizing, selecting relevant information from irrelevant information, recalling past experience, using prior knowledge and executing plans for a solution. People use internal images and external representations to help themselves prepare for the future and for problem solving. (See Figure 1.)

Visualization is the conscious act of directing the internal images of the mind (Hortin & Bailey, in press). Images are triggered by both external stimuli and the mind's own internal creations. Internal images may serve as representations and interpretations of the external world but also may be used to create a world apart from the external, a world of fantasy and imagination.

Images created in the mind from external sources (1) interpret what a person sees, (2) represent and store phenomena, and (3) give one reference and meaning (Hortin & Bailey, in press). Images that a person creates internally through imagination may help control future experiences through a technique called visual rehearsal. The author believes that teachers should use visual rehearsal as a means to improving teacher effectiveness. The process of "visualizing" what one is going to do and say prior to actual performance is an effective strategy. Certainly, verbal rehearsal has been advocated by teachers as a method for giving speeches or taking tests.

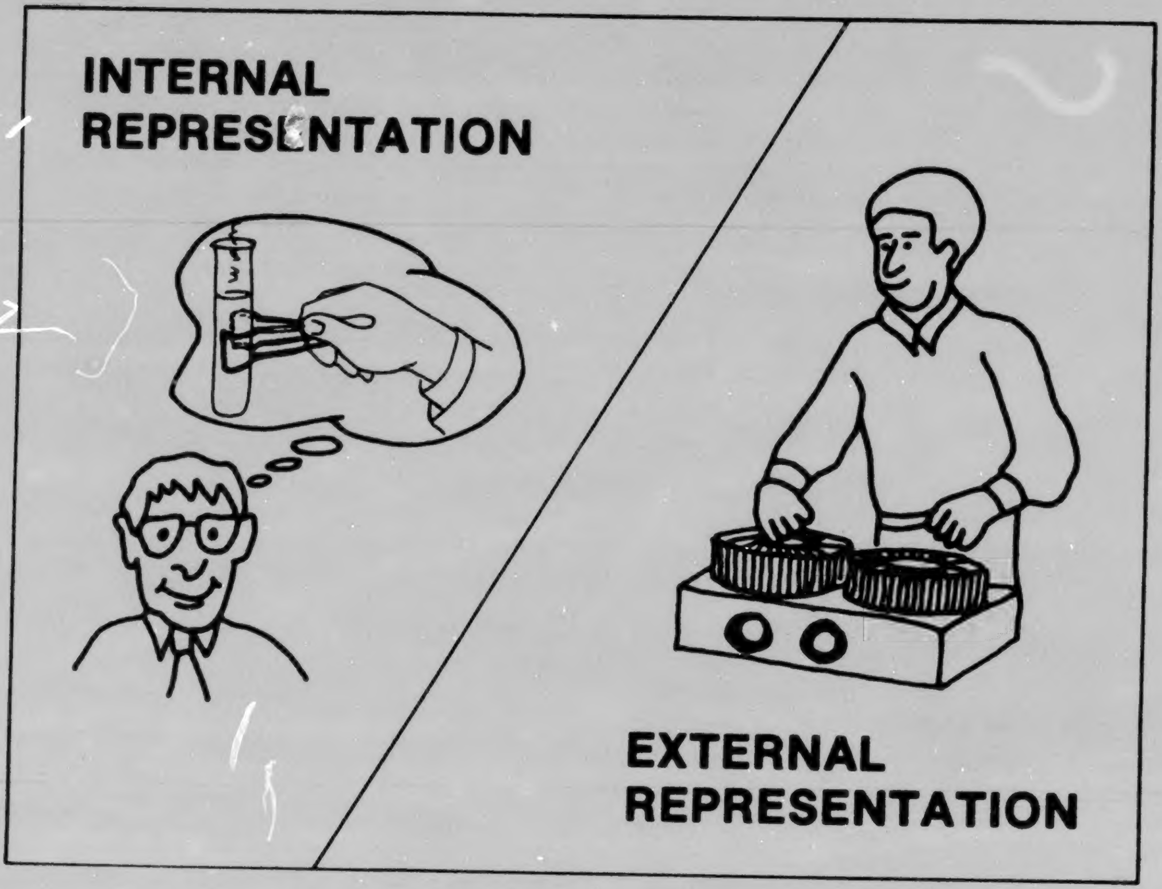

Figure 1. Sources of internal and external representation.

However, this is not just verbal rehearsal in the traditional sense but a visual rehearsal that provides a visualized event. Teachers can visually and verbally rehearse the performance, plans, processes and goals of their instructional behavior. Bry (1978) wrote:

> The visualization might focus on the process, the goal, or both process and goal. To be successful delivering a lecture, for example, you might see yourself looking wonderful and feeling relaxed before the lecture, review yourself actually giving the lecture, see a responsive and pleased audience, and maybe even see a positive report in the next day's newspaper. (p. 43)

Teachers could rehearse their future behavior as a kind of visual experiment. Dewey (1957) wrote:

> The experiment is carried on by tentative rehearsals in thought which do not affect physical facts outside the body. Thought

runs ahead and foresees outcomes and thereby avoids having to await the instruction of failure and disaster. (p.179)

Visually rehearsing a classroom situation gives the teacher some confidence and practice (Hortin & Bailey, in press). The teacher visualizes the student's faces, the seating arrangement, the behavior of the students, and the sequence of "images" which are projected as the lesson is presented. By acting upon this visualized rehearsal, the teacher can become relaxed, confident, prepared and creative. Visual rehearsal can be used to help a teacher in giving lectures, planning lessons, preparing reports and deciding on methodologies.

The following questions were developed to generate discussion about visualization and determine the effectiveness and extent of people's inner visions.

Visualization Skills

Directions: Before answering any of these questions, think of your office, classroom or study at home and visualize the scene that comes to your mind. Circle the answer that best fits your image.

1. Is the image defined and clear?

   a) Yes

   b) No

2. Is the image in color or black and white?

   a) Color

   b) Black and white

3. Do you see details as you look around the room?

   a) Great detail

   b) Moderate detail

   c) Little detail

4. Can you get a single visual image of the entire room that is a wider range than could be seen by a single glance of your eyes?

   a) Yes

   b) No

5. Can you visually hold this image of your office, classroom or study for a period of time (1 minute or more) or is the image unsteady or tiresome?

a) 1 minute or more

b) Unsteady

c) Tiresome

6. Can you see yourself in the room working or teaching students?

   a) Yes, however the images are vague or dim.

   b) Yes, the images are vivid, similar to a motion picture.

   c) No

7. When you see yourself in the room working or teaching students, what is your role?

   a) It is as if I am a student or third person and I can see myself working or teaching, as if I were an observer of the action.

   b) I can see myself as if I am participating in the action, not as a third person but an active participant performing the behaviors that I normally do in this situation.

   c) I can do both A and B.

   d) I find this an impossible task.

   e) I can do this to a degree, but it is difficult.

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VISUAL LEARNING: TRANSACTIONAL, EXPRESSIVE OR POETIC?

by

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Teachers of English, social studies, and other predominantly verbal subjects have long felt a need to include some visual content in their instruction. They have assumed that the inclusion of pictures, charts, and maps in their teaching would promote learning but have not been sure about how best to use these visual resources.

One problem with inclusion of visual resources in instruction has been a lack of knowledge concerning the effectiveness of the many forms of visual communication, the highly variable design of visual resources, and the diverse purposes for which they are used in teaching. Less is known by educators about variations in the forms of visual communication than about the range of verbal communication. Thus the topic of this paper is to introduce and explore a system for categorizing the visual work of adults and children, particularly photography, and to explore some of the implications of this scheme for education.

James Britton (1970) has helped educators to understand how patterns of speaking and writing vary depending upon the intentions and maturity of the individual. His work has focused upon the child and how language contributes to the development of the child's intelligence--even the seemingly trivial talk-for-its-own-sake so typical of children among peers. Britton has shown that even this ordinary talk--including first attempts at writing--contains the seeds of the language of such specialists in formal communication as scientists and poets.

We believe that Britton's ideas hold the promise of helping teachers to use visuals more effectively in spite of obvious differences between language systems and visual systems.

Britton has observed that "formal language" can be used poetically or transactionally. "Informal language" takes on the functions of expressiveness and tends toward the poetic or transactional without actually becoming either one in a mature sense. It is these three constructs which Britton has applied to language--the poetic, the transactional, and the expressive--that we propose to apply to visual communication.

"Less is known by educators about variations in the forms of visual communication than about the range of verbal communication."

Expressive Language: Verbal and Visual

Britton has used the ideas of Edward Sapir (1961) to describe the ordinary speech or writing of children and adults as directly expressive. Expressive speech is subjective and situational: it "tells us a good deal about the speaker and relies heavily for its interpretation on the situation in which it occurs" (Britton, 1970, p. 168). Expressive speech reflects the fleeting emotions and personal experiences of the speaker, and accounts for the point of view of the listener only insofar as the listener is a particular person or persons interacting with the speaker. Young children are, seemingly, incapable of anything but expressive speech for the very reason that, in their egocentrism, they cannot escape from a highly personal point of view or adequately account for the listener's. With the advance of a person's maturity and with appropriate education, the speaker may learn to formalize his speech: to use established meanings in conventional ways to seek reliable communication with a general audience. The more the writer or speaker structures his messages in this way, the less he is being expressive, subjective, or situational. However, this is not to suggest that once an individual becomes capable of formal discourse (s)he will abandon "expressive" communication.

On the contrary, for most adults, expressive verbalization continues to be important in everyday interactions with others, whether a chat during coffee break, or in the writing of a personal letter. As Britton suggests, expressive language is a social phenomenon resulting from interpersonal interactions occurring between people having something in common. It is attractive in its simplicity, spontaneity, and informality but rarely is it memorable or even of interest to any but those sharing in the experience. The following tape-recorded conversation of a group of third grade students recounting a visit to the circus is typical of the nature of expressive speech.

> Nicoletta: I liked the little bulls. They were really nice.
> Domingus: I like the neat ones. They go (he trills).
> Kurtis: Yeah, and they came in and their horns poked in the blue.
> Domingus: Hey, did you see that girl who went in and tried to get up and they went waugh, waugh (mooing sounds).
> Domingus: Yeah, I liked the pony that went (whinnying sounds) and it goes up (whoa sounds).
> Cory: I like the back horse rider.

One of Britton's main points is that schooling in language and thought must start with an understanding and acceptance of expressive talk and writing. He suggests that teachers should welcome the subjectivities and imperfections of expressive language, using them as essential starting points close to the "self" of the writer. Of course, Britton suggests that a teacher's acceptance of the expressive is often a "means to an end"--the education of students to read, write and speak more formally.

Similarly, expressive visuals can be part of the everyday communication of children and adults. By this we mean the spontaneous doodles, drawings, sketch maps, and snapshots that are as much subjective and situational as is expressive speech. For example, the results obtained from putting a camera

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into the hands of a first grade child can best be described as expressive. When first given a simple camera with no particular assignment as to what to photograph, the young child will typically indulge in a session of "snap shot" photography. The child's first impulse is to seek out friends or family members who are subsequently grouped and photographed in various arrangements. In turn, the "photographer" will wish to appear in the photographs and will devise various situations and poses to accommodate this desire. Continued access to the camera, however, soon results in more varied pursuits. The young photographer becomes more of an observer and documenter of events, and begins to intervene less and less in the staging of the photograph. As a result, the photographs become more purely candid and spontaneous, while the subject matter becomes more varied.

It is probably safe to say that the majority of the billions of photographs taken each year, whether by adults or children, fall into the expressive category. By and large, expressive photographs are the product of a spontaneous desire to capture a moment in time and, as a result, they are characterized by a sense of spontaneity and immediacy. The intent is usually that of documentation of an event, but can be of a place, a thing, or of a person. Typically, the situation documented is uncontrived, and the composition is intuitively and quickly arranged. Good design or significant meaning are not likely uppermost in the photographer's mind, although they may be inherent in the subject matter or be present as an accidental by-product.

"Expressive photography is subjective and situational, subject to the fleeting emotions and personal experiences of the viewer."

Britton's criteria for expressive speech hold up well when applied to photographic statements. Expressive photography is subjective and situational, subject to the fleeting emotions and personal experiences of the viewer. It is egocentric, highly personal, and designed for a limited audience. The adult photographer at the beginning level will document birthday parties, family events, vacations and so on. With practice and experience, these sometimes staged and formal photographs begin to give way to more purely candid and spontaneous work as the photographer strives for a more accurate record of the character of an event or person.

This explanation does not account totally, however, for the family picture album for, sequestered in its pages, one will usually find images that transcend the simple recording of events--images of mountains, flowers, rivers, animals. These images are the natural result of the human capacity to respond to the visual environment, the product of a desire to record a moment of perceived beauty. This type of photography--the "pretty picture" snapshot--we can regard, too, as a form of expressive photography because of its spontaneity and lack of concern with convention. It is in these realms, the "posed" and/or "candid" shapshot, and the "pretty picture" snapshot, that most of us enter the photographic fray. Without development and enhancement of our visual skills, however, they may be the areas in which we are destined to live out our photographic days.

Transactional Language: Verbal and Visual

Like "verbal language", visual communication can also be described as transactional or poetic. Britton characterizes both styles as formal. Transactional and poetic writing are formal in different ways and for different purposes but both are carefully differentiated to achieve a desired effect upon a wider audience. Transactional writing uses well defined symbols and conventions to express a particular sequence of meaning. The writer seeks to use established definitions to ensure that all of the particular words and phrases are likely to be similarly comprehended by the largest possible audience. In other words, transactional writing seeks to be explicit, and is designed to contribute to ongoing knowledge and activities. It is read by people who are seeking particular information to perform a task or to participate in the sequential accumulation of ordered knowledge. In its most characteristic and effective form, transactional communication is articulated to fit the capacities and need of participants in an activity. Perhaps its ultimate expression is in the explicit and concise writings of the scientist or philosopher seeking to communicate with a community of scholars.

Much visual information is similarly transactional in intent. Through the use of well understood signs or clearly labelled elements, transactional visuals attempt to provide the cues necessary for visual comprehension. They are used to illustrate such particular and conventional knowledge as a concept in science, the details of an industrial process, the directions for assembling a computer, or the location of population on a map.

While much expressive photography contains certain transactional elements, it is profitable to develop the concept of a more purely transactional photographic intent. While expressive photography tends to be spontaneous, resulting from the desire to capture a particular moment or event, transactional photography in its purest form is concerned with recording visual information in a precise and unequivocal manner.

For example, on a trip to Rome, the expressive photographer may be satisfied to photograph the Parthenon through the window of the tourist bus--it is enough to say that "he was there". By contrast, a photographer with a transactional intent, such as an art historian, is certain to get off the bus and will in all likelihood study the structure from a variety of angles before selecting one or more as giving the best representation of an architectural innovation or aesthetic concept. The photographer's intent is to convey selected information about the Parthenon in the most explicit manner possible in order to satisfy his informational intent.

But this is but one form of transactional photography. Many situations exist where it is the photographer's intent to capture with uncompromising accuracy and fidelity the "reality" of a situation. A sampling of imaginary science photographs helps illustrate the point. Imagine if you will a photograph of a hummingbird in flight, its frantic wings arrested by a high speed strobe. It may be an aesthetically appealing photo, true, and it may evoke an emotional response, but its basic intent is informational, as it illustrates wing movement and the attitude of the hummingbird's body as it approaches a feeding situation.

Similarly, picture a nesting owl, sitting high and vigilant above the forest floor, eyes yellow and unblinking, muted feathers serving as a blanket for a clutch of eggs and as camouflage, melding with the woody background. Or the moose, belly-deep in its watery habitat, head raised and canted, weeds dripping from its massive antlers. Consider the vivid purple patterns of plant cells etched on a glass slide. Each photo can be appreciated from an aesthetic viewpoint--color, pattern, form, the inherent beauty of natural things in natural settings. Yet, each may have another primary intent altogether--to tell us something of that thing, what it looks like, what it does, where and whether it lives.

The successful transactional photograph may be a happy accident, but generally it is characterized by much advance preparation, a high degree of photographic and technical knowledge, and frequently, a high degree of familiarity with the subject. The situation is, typically, highly contrived, dependent on taking full advantage of well thought out camera positions, exacting lighting conditions, precise focus, and optimum depth-of-field considerations. By and large, the situation is photographer-controlled with the photographic moment being determined largely by the photographer when conditions are seen as optimum.

Transactional photography then, is an attempt to "tell it like it is" and as exactly like it is as possible. It can be seen in some (not all) advertising photos, retail catalogues, promotional brochures, industrial and trade magazines, nature photos, and instructional books to name but a few sources. At its best, it is photographic work of a high order, requiring painstaking preparation and a high degree of skill.

Poetic Language: Verbal and Visual

Poetic language has very different purposes and methods from the transactional. Although it is equally as formal as transactional writing in its deliberate use of convention to communicate with a wide audience, it is designed to be contemplated "in itself for itself". Poetic language whether used in prose or poetry per se, is designed to interrupt, upset, or cause an accommodation in the perceptions of people. It is designed temporarily to turn persons away from participation to engage in contemplative thought, intuition and feeling. In its most powerful forms, it may seek to provoke strong feelings, or nudge us towards major insights and understandings.

Poetic writing struggles to escape the fragmentary and sequential nature of language to create holistic meanings. Britton states "Poetic writing is contextualized, not by segments, but as a whole" (p. 175). Words are formally organized to stimulate an expression of sounds, images, and feelings to generate harmonious emotions or ideas. Poetic writing is avowedly implicit, while transactional writing seeks to be as explicit as possible. In being implicit, poetic language calls for the perceiver to give more of himself in finding meaning than does transactional writing. It is more open-ended and more likely to be interpreted by the reader in ways relevant to his situation.

Like poetic verbal language, poetic "visual language" is created to be contemplated. Poetic visuals are strongly holistic and implicit in their content in contrast to transactional visuals which tend to be explicit and dependent for meaning on a clear identification of parts, relationships and context. Poetic photographs deal in the language of shapes, colors, lines, textures, patterns, contrasts, harmonies, and rhythms. They are images that prompt us to observe the physical world in new and wondrous ways causing us to find enjoyment and interest in things we have never seen before or in seeing familiar things in ways we have never seen. These images, clever distortions playing on visual reality, pick away at our intellectual natures--we wonder what they are or wonder at what they are. But, while they may speak to our aesthetic awareness, they do not necessarily engage our deeper emotions. As a result, we cannot circumscribe the poetic realm strictly within the boundaries of visual exploration. The poetic realm is, we believe, much more than that for within its confines we can assemble many other images, images of the human condition, images of nobility, grace, exhilaration, triumph, defeat. These are images which are meant to speak to ourselves about ourselves--our moods, our morality, our very existence--and to provoke us to think about the universality of the human experience.

It should by now be apparent that the photographer with poetic intentions would photograph the Parthenon in ways quite different from the transactional or expressive photographer. Like the transactional photographer, though, the poetic photographer would likely engage in a great deal of study before selecting his images (although the converse can be true--many excellent photographs are the product of intuition and instantaneous recognition of composition and moment). The poetic photographer is not likely to be concerned that his images convey specific information through conventional means; images which enable, indeed require, viewers to respond in more or less predetermined ways. Instead, he is likely to be more concerned with the intrinsic nature of the subject; in the case of the Parthenon, the rhythm of the columns, the play of light and shadow, and with concepts such as majesty or solitude. These personal visual statements would be designed to engage individuals in contemplative thought, to evoke an emotional response, and to prompt the viewer to construct his own insights and meanings. Poetic images are intended to have extrinsic meaning beyond the qualities of their intrinsic design.

As with successful expressive and transactional photographs, a good poetic photograph requires consummate skill and command of the craft. This is not to suggest that the amateur photographer, however raw, cannot begin to explore in these areas. In fact, the amateur photographer should be encouraged to foray into both the transactional and poetic realms as well as to continue to develop in the expressive area.

Like the good transactional photo, the successful poetic photo is often the result of much careful planning, technical competence, and a great deal of input from the creative visual imagination. Many good advertising photos, for example, are the result of hours, even days, of advance work and preparation. On the other hand, the trained eye, alert for photographic possibilities, can find the poetic in the ordinary, in fact, can make the ordinary poetic or even profound.

In summary then, we believe that the poetic, expressive, and transactional constructs as developed by Britton can provide useful insights into a more complete understanding and appreciation of all visual works, more particularly, photography. First of all, they permit us to acknowledge the basic "expressiveness" in all of our photographs. Whether we remain exclusively at this "expressive" level--amateur documentors and historians of fearful and prolific proportion--or whether we continue to develop our photographic abilities as photo journalists, commercial photographers or artists, our photos will unfailingly register our personal viewpoint, our style, our emotions, our basic egocentrism.

Secondly, Britton's model gives us three rather manageable categories for assessing photographic work and a means through which others may enter the world of photographic understanding and appreciation. Even elementary-aged children may begin to discuss photographs from the "why" point of view. Why did the photographer take the picture? What was his primary motive? Was he intent on capturing a moment in time, an historical event, a moment of perceived beauty? Was he concerned primarily with transactional qualities--fidelity of the image, the accuracy with which the image was rendered and its ability to transmit information or feeling in like amount? Or was his intention primarily to explore the poetic realms of rhythm, color, shape, feelings, morality--holistic images to be contemplated and, perhaps, never totally understood.

Elementary and grade school children can begin this process through an examination of family photo albums, studies of pictures which they themselves have taken, and through exercises which move them purposefully and systematically into the study and making of expressive, poetic and transactional images.

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READING PHOTOGRAPHS: THE ANTHROPOLOGIC PARADIGM

by

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Reading Photographs: The Anthropologic Paradigm

As designers of visuals we are always seeking ways to understand the communicative properties of the image. How do people interpret or "read" the visual message? Each of the visual media has its own unique way of communicating. Photographs, for example, have certain properties or unique media characteristics. Some of these characteristics include: a two-dimensional representation of three-dimensional reality, an image surrounded by borders, and a finite surface with edges. These physical properties have counterparts in both social and psychological properties of photographs. Both Susan Sontag and Roland Barthes have written eloquent pieces on the subject. This paper, rather, focuses upon interpretive aspects of the photograph.

Deriving meaning from photographs has received much attention. In his book *Reading Photographs: Understanding the Aesthetics of Photography*, Jonathan Bayer states that "good photographs stimulate the mind, assault it, amuse it and set problems for it. They demand to be read." In reading photographs the viewer becomes the creator. In a more pragmatic vein, Harry Beilin has suggested a developmental theory of pictorial comprehension. Beilin proposes that one possible reason for the lack of interest in photographic comprehension compared to reading skills is the assumption that photographs are directly and immediately understood and require no skills comparable to those of reading. He proceeds in his article to show that this is a false assumption.

Research in reading and interpreting photographs falls into two categories. If we use anthropological terms, they can be described as Etic and Emic approaches to classification. Traditionally studies involving the reading of photographs have used the Etic approach. This method is based on an analytic or external approach. Assumptions are that the concepts identified are absolutes, are commonly understood by people of various backgrounds and can be defined and identified in advance or *a priori*. In our current example of research in photography, this means that we select terms which we assume everyone will understand. We often use a semantic differential, for example, and ask people to "Rate the impact of this picture along a continuum from beautiful to ugly". Subjects are asked to choose a position between preselected bipolar adjectives that most appropriately describes the photograph. This scientific approach assumes that the significant concepts in the photograph have already been identified. Quantitative analysis of data resulting from *a priori* concept identification is then performed to determine how subjects view information in pictures. A second example of the Etic approach is content analysis.

In a study we conducted last year, we supplied a group of viewers with aesthetic categories conceived by the artists themselves and asked them to select photographs in which they could see those aesthetic categories which were identified. The results of this study showed that there was no uniform response either from undergraduate students or art professionals in their ability to identify categories which the photographers had said were in their work. Although methods such as these are objective and scientific, they presuppose that the categories chosen are identifiable and are, indeed, the most significant aspects of meaning in the photograph. Assigning categories *a priori* can only work if participants have similar backgrounds and the externally identified aesthetic values are agreed upon. Unless all viewers read photographs the same way, there will be no agreement on externally imposed variables.

In our opinion the Emic approach, characteristic of what is called New Ethnography, offers a model which is well worth exploring as one alternative in examining how we read photographs. The Emic system of classification is an internally based process which emerges through discovery. According to this view, cultural behavior is valid for only one group at a time and is best studied among people of similar backgrounds. Units of meaning are discovered rather than imposed from outside. Patterns which emerge from within the group are described afterward or *a posteriori*. The Emic model is basically inductive and elicits categories from the viewers themselves. These categories can be described verbally as they emerge, or they can be observed visually as a result of q-sort or free sort techniques. We are working on a series of studies using a free sort technique. In these studies viewers are asked to sort photographs into any groups they choose. There is no limit placed on the number of groups nor on the time they spend at the task. Over 100 photographs from magazines representing a wide variety of subjects and treatments are used. After a viewer has gone through a first sort we record the numbers on the pictures by group. The pictures are then shuffled and the viewer is asked to sort them again. This process is repeated until the viewer has no more categories for the pictures. The groups are then reconstructed and the viewer is asked to explain how each group was similar. We are able, through multidimensional scaling, to synthesize categories which are important to a majority of people. The taped interviews give us verbal information and the grouping of pictures gives us the visual information. The way people group and describe pictures is largely dependent on background and experience. People are always looking for contextual clues.

How homogeneous a group are we here? When you see the picture in Figure 1, you know that it was probably taken in a warm part of the country, either the West or South, because of the palm trees. If, in addition you are from Phoenix you know that Figure 2 is from the Pointe Resort. This is an important contextual clue since not everyone recognizes a swim-up bar when they see one. The final photograph is more ambiguous than you would think. Only people who have frequented high class resort hotels recognize Figure 3 as the imprint of a swank establishment pressed into the sand to signal that the ash trays have been cleaned. You can see that the problem of interpreting photographs is related to one's cultural and contextual background. You may know the elements in the photograph (sand in a concrete container) but the cultural clues may be missing for you.

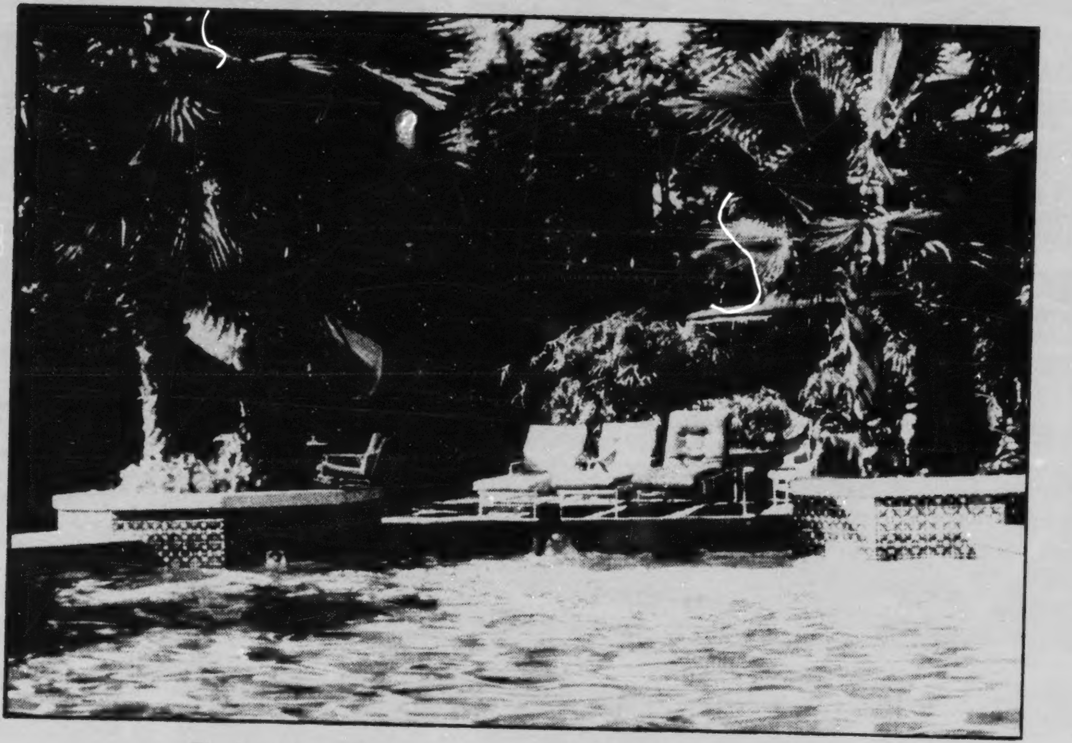

Figure 1. Palm trees as contextual clue.

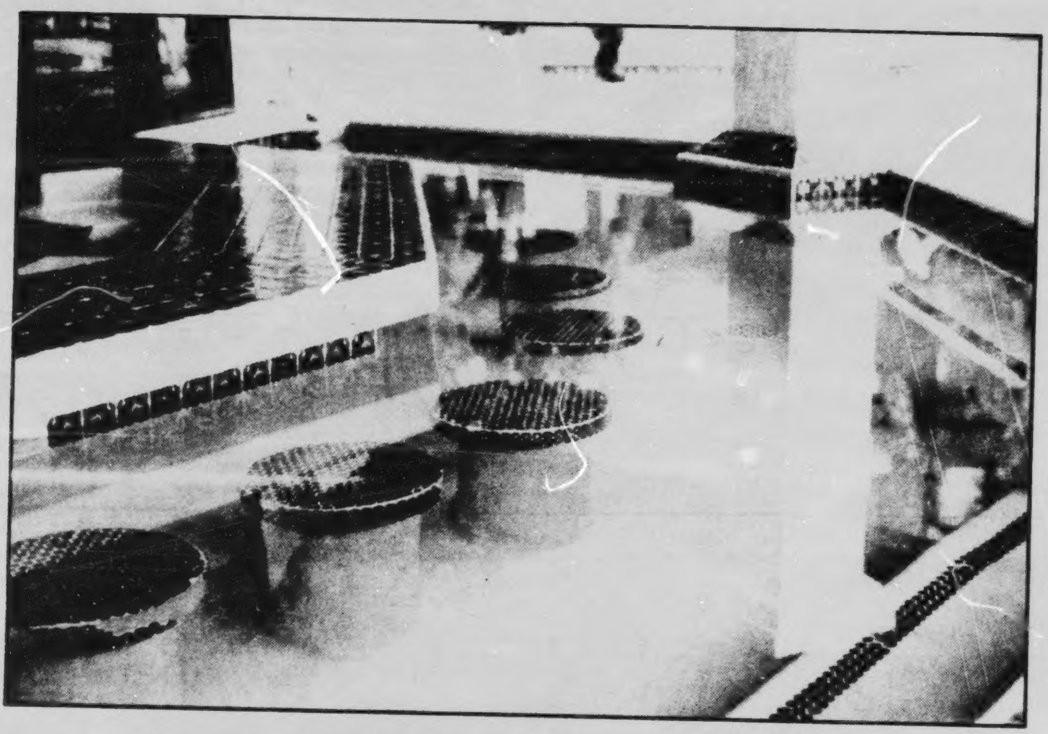

Figure 2. A swim-up bar at the Pointe Resort.

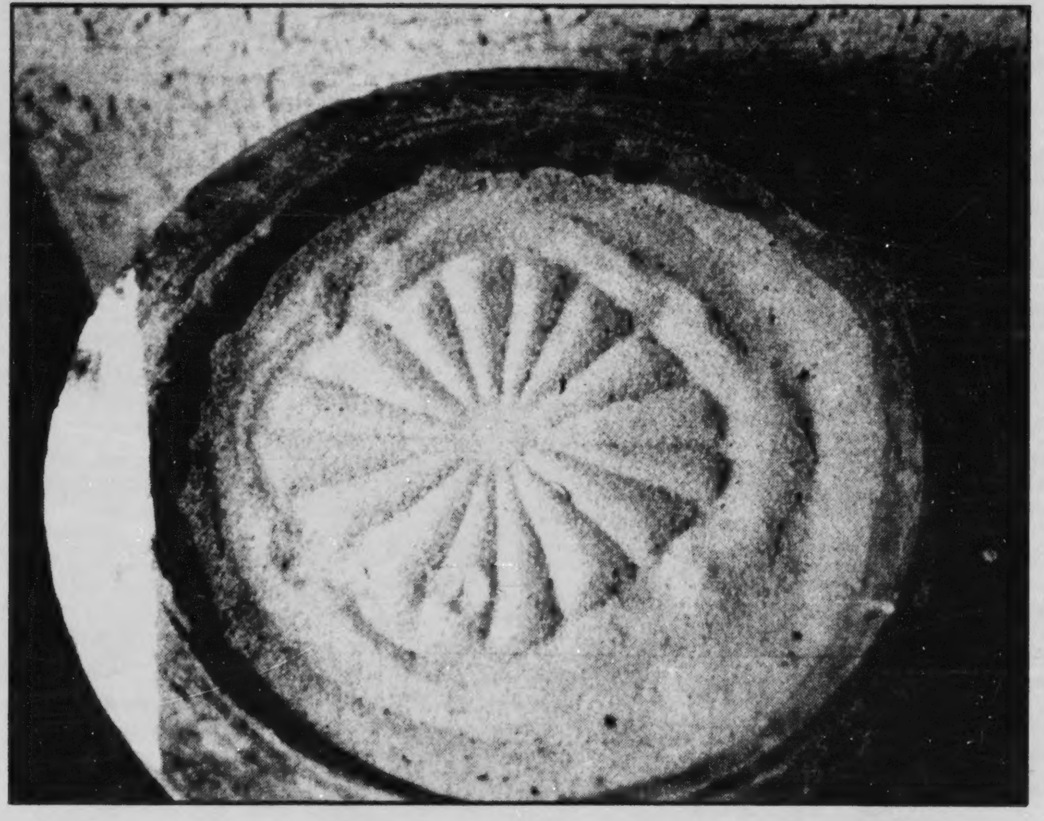

Figure 3. Sand imprint.

Visuals are embedded with cultural meaning and our research models must take this into account. The Emic paradigm seems to be particularly useful as a way to develop a vocabulary to describe how people interpret visuals. Visual and verbal language have very different communicative properties. Individual verbal language, by its very nature, contains cultural similarities. Eskimo languages contain many words for our single word snow. Each language is culturally determined and defined. Visuals, however, have the capacity of a universal language. Nevertheless, how one "reads a photograph" is largely dependent on one's cultural background. Visual clues which cannot be interpreted may be read erroneously or even ignored. One study involving perception of color cues with native African populations indicated that certain primary colors were recognized in photographs but that other colors which were absent in their culture were not recognized.

A well known example of using an Emic approach to visual research was the now classic study by Worth and Adair, in which Navajo filmmakers were encouraged to visually illustrate aspects of their culture. When Indian students used their own filmic techniques to express their subjective realities, there resulted long segments of walking down a road. Non-Indians found these shots tedious but when asked if these segments were boring to watch, Navajo viewers said no. Journeying and travelling is basic to their cultural experience. They have a nomadic heritage and even today many families live widely scattered and isolated lives. Travel on foot, on horseback, or even by truck is meaningful to their daily existence. So, in the film there are long segments of journeying to get wool from the sheep, plants for dyeing yarn and materials for silversmithing. Their journey is part of a way of life which includes rhythmic movement reflected in the process of weaving as well as in their Navajo rug designs.

Navajo designs contain motion and the concept of circle. Their hogans reflect these same cultural values. The circle is never closed. There is always an opening to allow the spirit both freedom and movement. This central theme is visible inside the hogan where the rug is being woven with a small break in the circular pattern to let the spirit out.

Through Navajo Eyes, the study by Worth and Adair, has become a classic in visual research. Their hypothesis, that without formal training Navajo students would construct a film which would reflect their particular cultural reality, was confirmed.

The power of visuals is evidenced in Hopi culture as well. Aside from the common feeling that photographing a person is frowned upon because it imprisons some of that person's spirit, there is the strong belief that visual representations have their own power. Victor Masayesva, a Hopi artist, when asked why he didn't videotape ceremonial dances for future generations of Hopis, said that after he once taped a ceremonial dance strange things happened, deaths and such, and he would no longer do that. In addition he said that recording the dance killed it because after that every dancer would do it that way instead of adding their own interpretations. Some of the over 300 kachina dances are no longer performed, or are only performed when necessary. New dances develop in their places. The feeling that taking a picture imprisons and deadens the event is strong among some cultures.

If photographs are embedded with cultural meaning, then by using the Emic approach values developed from within can begin to form patterns. It is in these developing patterns that discoveries are made which add to our understanding of the process. In the Navajo study use of the Emic approach allowed the cultural meaning inherent in walking and travelling to emerge as a pattern in the film. In our research on how people interpret photographs we will be asking viewers to create their own meaning from photographs. By asking viewers to describe verbally and assemble visually we hope to begin to develop a basic common vocabulary which describes the visual conceptualizations which are taking place.

"The Emic paradigm seems to be particularly useful as a way to develop a vocabulary to describe how people interpret visuals. Visual and verbal language have very different communicative properties."

INVESTIGATING VISUAL COMMUNICATION IN DIAGRAMS

by
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Some diagrammatic communications are more effective than others. This investigation has focused on the communicative effectiveness of selected design traits in diagrammatic "sending" and "receiving" contexts. First, I reported on the findings from a three-part investigation in which college students constructed diagrams of information networks. Subsequent analysis of these diagrams showed significant relationships between ratings of selected design traits, the dependent variables, and variations in the written statements from which the diagrams were made. Second, I described the preliminary results of an indicator study of diagram "reading." College students, with no knowledge of the actual information networks depicted, could determine the explicitness or openendedness of relationships in diagrams from the previous diagram construction studies.

Diagram Construction Studies

University students, thirty-two at the University of Iowa and thirty-two at Oregon State University, constructed four "mute" diagrams apiece from statements that were printed on index cards. Mute diagrams have no written or numbered elements; they contain merely shapes, representing the entities in the information network, and connectors in the form of lines, bars, arrows or enclosures according to the desire of the diagrammer.

The information statements described sequential relationships and included three independent variables: (a) explicitness of relationships, (b) complexity, number of informational elements, and (c) style of text, casual or systematic narratives. A few procedures for eliciting and rating diagrams required considerable pre-experimental testing followed by systematic investigation of equipment and task structure.

Raters judged projected slides of the diagrams for each selected design trait along design continuum scales. Three design continua measured structural relationships: (a) linearity--straightness of diagrammatic path, (b) order--ranging from symmetry to disorder, and (c) continuities--the clarity with which the diagram showed connections between stages. The last trait, (d) geometry of forms, measured the proportion of geometric versus non-geometric shapes representing entities in each diagram.

The study involved three experiments. The experimental design of the first two called for sixteen diagrammers with two participants per cell. The third experiment involved thirty-two diagrammers with four people per cell. Along with the ongoing independent variables of statement explicitness and complexity, Experiment 1 investigated the influence on design traits of variety

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and supply of diagramming shapes and of explaining decisions during diagramming. Experiment 2 retained the explicitness and complexity of statement variables and added three variables concerned with diagrammer training. Distribution of training sessions and variations in training strategies were pre-diagramming variables. The measure of training effect during diagramming was variations in sequence of rendering complex statements. With the exception of a gender variable, Experiment 3 focused on variables within concept statements. The explicitness and complexity variables were joined by the styles of text variable and size modifiers on some concept entities. The increased number of diagrammers and a shift of the explicitness variable to a between subject position in experimental design increased the generality of findings in Experiment 3.

Of the four dependent variables, only the three structural design traits showed significant effects ($p < .05$). Of the independent variables, range of explicitness influenced all three structural design traits in all experiments. Levels of complexity showed significance on a different design trait in each of the second and third experiments. Styles of text, an Experiment 3 variable, influenced linearity significantly. The developmental variables in Experiments 1 and 2 and the gender variable in the last experiment did not register significant effects.

> ***"The concept statements, the verbal component of the methodology (developed for this research), will permit inquiry into linguistic discourse and reading comprehension with provision for nonverbal responses."***

The findings of these diagram construction experiments justify further inquiry into the communication cycle. If design traits represent a visual communication component to diagrammers as message senders, how effectively do diagrams convey their message characteristics to readers through design components? What other characteristics of information lend themselves to structural expression in diagrams and what other design traits may represent them? The methodology developed for this research may serve several functions. The concept statements, the verbal component of methodology, will permit inquiry into linguistic discourse and reading comprehension with provision for nonverbal responses. Education may subsequently benefit through improved instructional materials and more effective diagramming activities for learners.

Diagram Reading Study

The diagram reading study is the initial follow-up on the diagram construction investigation. The purpose of the study was to learn whether high or low ratings on linearity (L), order (O), and continuities (C) in diagrams from the previous experiment were related to successful identification of explicitness or open endedness by college level diagram readers. Twenty-four, third-year education majors at Western Oregon State College received different amounts of training in diagram viewing in support of their task.

Independent variables included eight pairs of explicit diagrams and eight pairs of open ended diagrams. Each paired group of stimuli contained all combinations of high and low rating design traits, L, O, and C. Therefore, each viewer saw thirty-two diagram slides in two sets of sixteen. Each randomly ordered set contained all eight combinations of high and low rated design traits for both explicit and open ended concepts.

All participants received orientation to the viewing task by reading four sample statements of relationship and sorting them into piles of explicit and open ended structures. After rating sixteen diagrams, half of the students read four more concept statements and then experienced formal, interactive training using sample diagrams before rating the remaining sixteen slides. The other twelve participants had no formal training in diagram rating at the mid-point in the experiment; they merely read four more concept statements and proceeded. The dependent variable, correct or incorrect ratings of the explicitness or open endedness of diagrams, yielded data which at this date are in computer analysis.

Informal inspections of the raw data indicate that some combination of high or low L, O, and C traits are, indeed, associated with successful reading of explicitness but confound reading of open endedness and vice versa. Formal training in diagram viewing appears to have increased rating success by about ten percentage points. Overall, viewers successfully rated sixty-seven percent of the diagrams.

> ***"It appears that design structure of nonverbal diagrams does communicate information about the range of explicitness of diagrammatic messages."***

While interpretation of the results is not yet possible, it appears that design structure of nonverbal diagrams does communicate information about the range of explicitness of diagrammatic messages. Further investigation with a larger set of diagrams will clarify some of the questions raised by this pilot study.

Discussion

The results of these studies suggest the existence of a visual or design communication cycle which bears further investigation. The methodology developed to facilitate these investigations will serve well in further inquiries.

Applications are likely to emerge in many areas of education and in the larger realm of visual communications. Language instruction and computer graphic communications may benefit from continuations of this line of inquiry. Modifications of traditional instructional diagram presentations in all curricular areas should occur. More important, movement of the diagramming process from the teacher's to the student's realm may offer the greatest long range instructional benefits.

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VISUALIZING THE VERBAL AND VERBALIZING THE VISUAL

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The purpose of this paper is to explore the sundry relationships of visual images to verbal elements. Words complement images and vice versa. Thus, it is the roles of the visual vis-a-vis the verbal (and vice versa) that will be discussed here. Some of the roles have been identified. For example, Duchastel (1978) has pointed out the three roles of illustrations in texts: a. The attention role where the illustration is meant to attract and motivate, b. The explicative role with illustrations serving to explain that which cannot be described, and c. The retention role wherein the purpose of the illustration is to be memorable (recall of the illustration theoretically will lead to recall of the text). When we speak of illustration in texts, however, we may be getting ahead of ourselves. What about the visual value of the text itself?

Visible (Verbal) Language

Visible language is all around us. These words on the printed page are an example of a visible form of verbal language. An extensive literature exists on visible forms of verbal language. In addition to the books and articles about picture languages, symbol systems, ideographs, and such, much has been written about English and other verbal languages as visible language. Verbal languages become visible when written, which has led to investigation of such things as typography, typographical cuing, printing conventions, format, and layout. As background for that which is to follow, let us skim a few ideas from each of those topics.

Robert Davis does not believe that title slides (word visuals) must be boring. He suggests that typography has both denotative and connotative meanings (Davis, 1982).

> The denotative meaning of a letter form or alphabet refers to the simple recognition of the letter forms themselves . . . the connotative meaning of type refers to the symbolic or emotional value of the letter forms beyond simple shape recognition (p. 14).

What Davis is saying is that some of the "feeling" that comes from the text originates with the appearance of the letters.

Capitalization, italics, underlining, size of letters, change of letter font, format, and other methods of typographical cuing are all obviously employed for their visual impact. Hershberger and Terry (cited in Wilson, Pfister, & Fleury, 1981) found that typographical cuing could be good or bad.

> Simple typographical cuing, distinguishing core from enrichment lesson content, significantly enhances the ratio of important to unimportant content learned without reducing the total amount learned . . . . On the other hand, complex typographical cuing . . . does not appear to benefit the reader in the least [and] may befuddle the reader. (p. 33)

Most of us take printing conventions for granted. It stands to reason, however, that every printed language must have rules, and those rules serve visual purposes. Haber and Haber (1982) discussed arrangements of print on the page and provided the examples of printing conventions shown below:

SELECTED PRINTING CONVENTIONS

END OF LINE

- **Right and left justified**
- **Hyphen indicates word division**

WORD

- **Space before and after**
- **Initial capitalization for proper nouns**

PHRASE BOUNDARY

- **Punctuation**
- **Extra space**

SENTENCE BOUNDARY

- **Initial capitalization**
- **Final punctuation marks**
- **Extra space**

PARAGRAPH

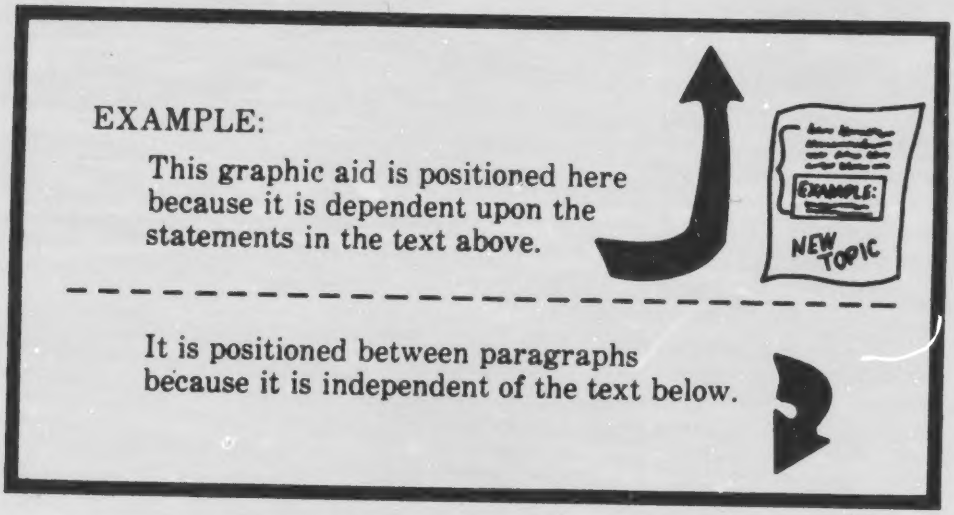
- **Indentation**
- **Skip a line**
- **Bold face, initial character enlarged, etc.**

Figure 1. Examples of printing conventions.
(adapted from Haber & Haber, 1981)

These conventions are so widely observed that we notice them only when they are violated:

WeCaNbEuNcOnVeNtIoNaLiNpOeTrYdRoPpInGtHeInItIaLcApItAlIzAtIoNoFlEtT
eRsFoReAcHlInEcOnTrIvInGiNdEnTaTiOnOfOuRoWnFaNcYaNdSpAcInGrAnDoMlY.
Or, put another way. . .
We can be unconventional in poetry, dropping the initial capitali-
zation of letters for each line, contriving indentation of our own
fancy and spacing randomly.

Matters of format and layout are less rule-bound but still seem to fall into conventional patterns. An exception is unbounded text (Duchastel, 1982). "The idea of unbounded text is simple: instead of presenting text on standard pages to form books, present text on large sheets so that large chunks of material can be viewed at a glance" (p. 19). If unbounded text has any high promise, that promise is based upon the assumption that the large spread sheet format will allow the reader (student) to get an initial "big picture" of the contents of, say, a chapter. The success of such a notion seems to be highly dependent upon the spread sheet having a variety of visual cues--things such as headings, various type faces, illustrations, and graphic materials. In other words, the visual aspects of the layout are a vital component which will help the student extract a meaningful message from a single glance at the holistic, but somewhat discontinuous, display of a large amount of content. With unbounded text, like other print formats, it would be well to follow Hartley's (1978) advice: "As a general rule, graphical aids should be positioned with regard to their dependence on, or independence of, statements made in the text" (p. 57).



EXAMPLE:

This graphic aid is positioned here because it is dependent upon the statements in the text above.

It is positioned between paragraphs because it is independent of the text below.

Verbally Dominated Graphics

Visible verbal language is at one end of a continuum which works its way toward the pure visual. Unbounded text, typographical cuing, and other forms of visually enhanced text begin to blend into a class of visual-verbal relationships which--for lack of a better name--we will call verbally dominated graphics. Words are essential to verbally dominated graphics, and even though they take many forms (see Figure 2), they all have that one thing in common: they are visual displays of verbal material.

Although verbally dominated graphics serve a number of purposes in print, the author would like to focus upon their functions in support of oral (vocal) presentations. The functional term chosen here as a label for illustrations used in support of all vocal presentations, whether recorded, filmed, taped, broadcast, or live and informal, is presentation graphics. The categorization is broad, including sundry kinds of illustration delivered by any of several visual media which are used in conjunction with the spoken word.

Presentation graphics could include every kind of visual that one might imagine. The reason for dwelling upon the verbally dominated forms is that they seem to be the most troublesome for the typical presenter. One class of verbally dominated graphics, the Outline Graphic (OG), will be discussed in greater detail than the others. The reason for concentrating upon OG's, a somewhat arbitrarily designated class of verbally dominated visuals, is equally

VERBALLY DOMINATED GRAPHICS

Media	Form	Functions	References
TEXT-BOUND	Information Mapping	• Unitize information • Cuing • Facilitate information retrieval • Structure • Visually enhance text	Hartley, 1978 Jonassen, 1981 Horn, 1982
	Multi-level Writing	• Identify alternate paths and levels • Facilitate information retrieval • Visually enhance text	Jewett, 1981
	Unbounded Text	• Provide holistic view • Visually enhance text	Duchastel, 1982
TEXT AND NON-TEXT USES	Pattern Notes	• Conceptual networking • Display relationships • Provide holistic view	Norton, 1981 Fields, 1982
	Outline Graphics	• Show organization • Display relationships • Reduce to skelctal concepts • Provide holistic view	Braden, 1982 Merrill, 1982 Waller, 1982
	Matrix Display (verbal)	• Decision guide • Display interactions • Segment, categorize, and block information	See examples in Gilbert, 1978 p. 124 & p. 137
	Flowcharts Time lines PERT Algorithms Systems models	• Highlight sequence • Show process steps • Record linear events • Display routines (computer programs)	Fields, 1982 Mandell, 1981 Richmond, 1968 Merrill, 1982 Gear, 1978
	Schematic (symbol) Diagrams	• Symbolize functions • Relationship of functional components	Douglas-Young, 1972 Bethune, 1980 Lopez & Warrin, 1978
	Logic Diagrams	• Decision guide • Interconnections • Logic functions	Bethune, 1980 Gear, 1978 Lopez & Warrin, 1978
	Hierarchical Displays • Models • HIPO • Organization Chart	• Hierarchy • Levels of importance or degree • Conceptual networks • Organizational structure	Merrill, 1978 Mandell, 1981

Figure 2. Popular forms of verbally dominated graphics.

pragmatic. The OG is a particularly potent visual tool for *instructional presentation*.

The Outline Graphic

The outline graphic is a form of visual display which, when properly designed, holds high promise as an effective instructional component. The OG is particularly well suited for use in instructional settings where complex verbal information is to be learned. OG's provide concurrent access to both visual and verbal elements. Their logic is primarily but not exclusively verbal. They rely upon the visual aspects of layout design and symbology to compress the several ideas of a conceptual cluster into a single comprehensible holistic display.

"Outline graphic" is a term that is somewhat self-defining (any outline done in any graphic form), and it is a term that captures in its categorizing breadth a sizable conglomeration of useful graphic forms. But there are definitional problems associated with all of the terminology of instructional "graphics" (Moore & Nawrocki, 1978). Universally accepted definitions do not exist, much less any consensus schema of categorization. Referring to the few schemata which have been offered, Duchastel and Waller (1979) stated,

> Instead of a taxonomy of illustrations, what is needed is a grammar of illustrations, i.e., a set of principles which relates illustrations to the potential effects they may have on the reader or learner. Such a framework implicitly carries within it a prescriptive dimension, as does any grammar, which can serve as a basis for practical design decisions. (p. 21)

Characteristics of Outline Graphics

We can expect to find certain characteristics in every OG:

- The content is *skeletal*. Thus the form parallels the attributes of the written outline. Visual design serves merely to reinforce the basic organization of an underlying verbal outline.
- The display of information has a *visual component* which goes beyond simple text. In many cases the visual component takes the form of visual cues. In others the visual contribution serves to enhance or to embellish. Devices such as creative spatial arrangement, border designs, artistic spacers, or even simple boxes for chunking or content segmentation are used for these latter purposes.
- OGs are *orderly*. The nature of the subject matter will strongly influence the type of order imposed. Some topics are linear. Others have a hierarchical structure and still others represent loosely affiliated groupings of subtopics.
- OG's are *holistic*. The outline element arranges all of the components and provides order. The graphic element helps to clarify the

relationships of those components to each other. Taken together the verbal and visual convey a message which addresses the composite whole.

Advantages

Three advantages of OGs merit comment: first, OGs cater to student differences. OGs tend to visually display complex verbal material, aiding those students who cannot visualize for themselves and those whose learning styles prevent easy accommodation to completely verbal material.

Second, OGs have the potential to clarify the organization of information meant for presentation to students. This advantage takes on special importance when we acknowledge that complex information is seldom clearly organized so that the content structure is face evident.

Third, and perhaps most important, OGs may have the potential to involve the whole brain in the learning process. There are no research studies (yet) to substantiate this conjecture. Still, we can speculate that with few exceptions OGs should appeal to the left brain lobe with subject content expressed in direct linguistic referents and should concurrently involve the right brain lobe with spatial-temporal relationships, visual symbology, and aesthetic-creative interpretation.

Skills

Not everyone can design effective OGs. Their design and production calls for a mixture of skills and aptitudes which includes such amorphous attributes as linguistic finesse, artistic talent, and aesthetic judgment. Additionally, however, there are six more concrete things that the competent OG designer must be able to do. They are:

1. organize information by grouping--whether by kind, by quantity, by quality, or by function;
2. organize information or events by hierarchy;
3. organize information or events by linearity;
4. reduce the content of organized information to skeletal form suitable for parsimonious display;
5. apply basic design principles and emphasis cues to the display of any kind of organized information; and
6. adapt graphic form to meet the intended communication or instructional function.

An Adaptive Example

Over time, a schema has evolved for categorizing visual displays based upon the Structure of Intellect Model (Guilford, 1967; Merrill & Bunderson, 1981; Moore & Nawrocki, 1978). This categorizing system provides a vehicle for demonstrating the adaptive pliability of the graphic form. (Fortuitously, the subject content of this example relates to the OG topic.) In the example, four quite different OG design renderings of the categorization scheme are shown. A particular instructional intent prompted the design of each rendering. The first is similar to the verbal outlines we learned to prepare in seventh grade English (Figure 3). The graphic follows accepted outlining rules which control its development. The thin-wall box, three letter sizes, and a dashed line setting the title apart are the only graphic elements. The figure is so dominantly verbal that it barely qualifies as an OG.

CATEGORIES OF VISUAL DISPLAYS*

- A. Alphanumerics
  - 1. Textual
  - 2. Tabular
- B. Graphics
  - 1. Figural
  - 2. Symbolic
  - 3. Schematic
  - 4. Pictorial
- C. Objects or Events
  - 1. Real
    - a. real objects
    - b. actual events
  - 2. Representational
    - a. models
    - b. mock-ups
    - c. simulators

*(adapted from Merrill & Bunderson, 1981)

Figure 3. Minimal outline graphic.

In Figure 4 there is less verbal information displayed. Even so, the message is not necessarily diminished. The organization of the conceptual elements is emphasized and a clear hierarchical picture is given which offers an orderly arrangement of components by level of class. The graphic techniques which contribute to this image are the visual cliche of the organizational diagram, three letter sizes, light italic letters contrasted with others that are medium bold, accentuation of the higher organizational levels caused by bolder lines in construction of the upper boxes, and a stiffly formal layout with an obvious concern for symmetry.

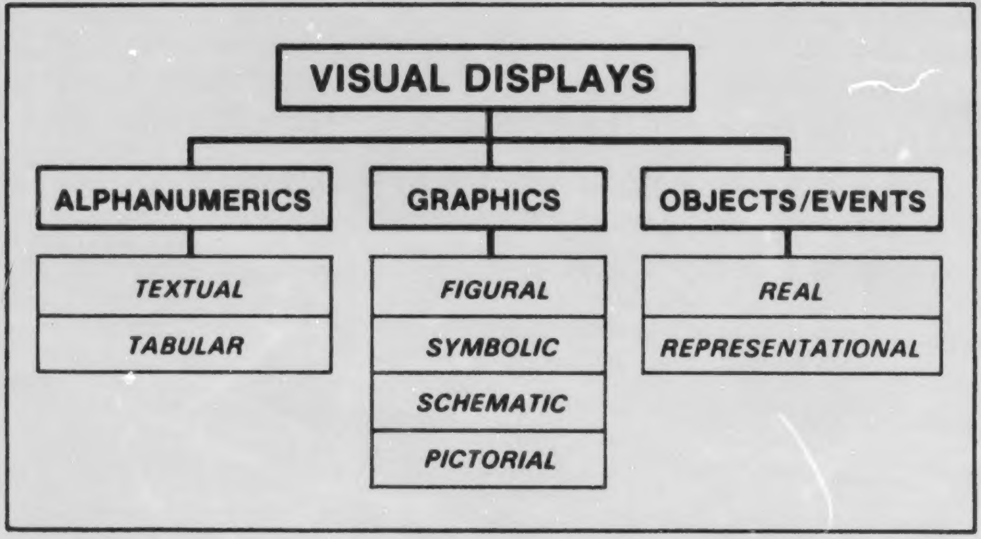


Figure 4. Outline graphic as hierarchical organization diagram.

The layout of the components in OGs need not follow a top-to-bottom pattern. When a holistic view is desired, the outline can be organized around a central element as in Figure 5. In this case the title is not necessary except as a design feature contrived to capture the viewer's first glance as it goes to the upper left corner. The center abbreviation is an extension of the title. It is intended to draw attention toward the central triangle. The shape calls attention to the trichotomous nature of the subject matter while concurrently pulling the several separate parts together as an entity. This OG provides one central cluster and three remote clusters of components.

In Figure 6 the central shape is a circle. The sub-topics and sub-sub-topics have been arranged around the periphery of the image. The desired effect of this layout is to emphasize the relationships of the components to each other. In that sense, the illustration is integrative. Thus we see that "pictorial" items are classified under "graphics" but that they are closely related to "real objects" which are classified under "objects or

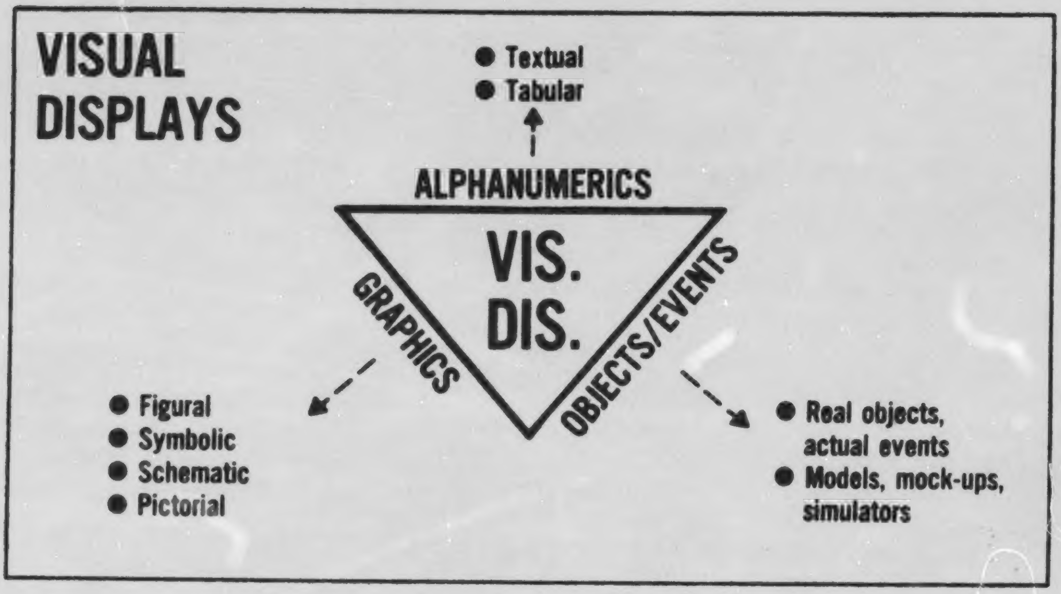

VISUAL
DISPLAYS
● Textual
● Tabular
ALPHANUMERICS
VIS.
DIS.
GRAPHICS
OBJECTS/EVENTS
● Figural
● Symbolic
● Schematic
● Pictorial
● Real objects, actual events
● Models, mock-ups, simulators

Figure 5. Outline graphic with component clusters.

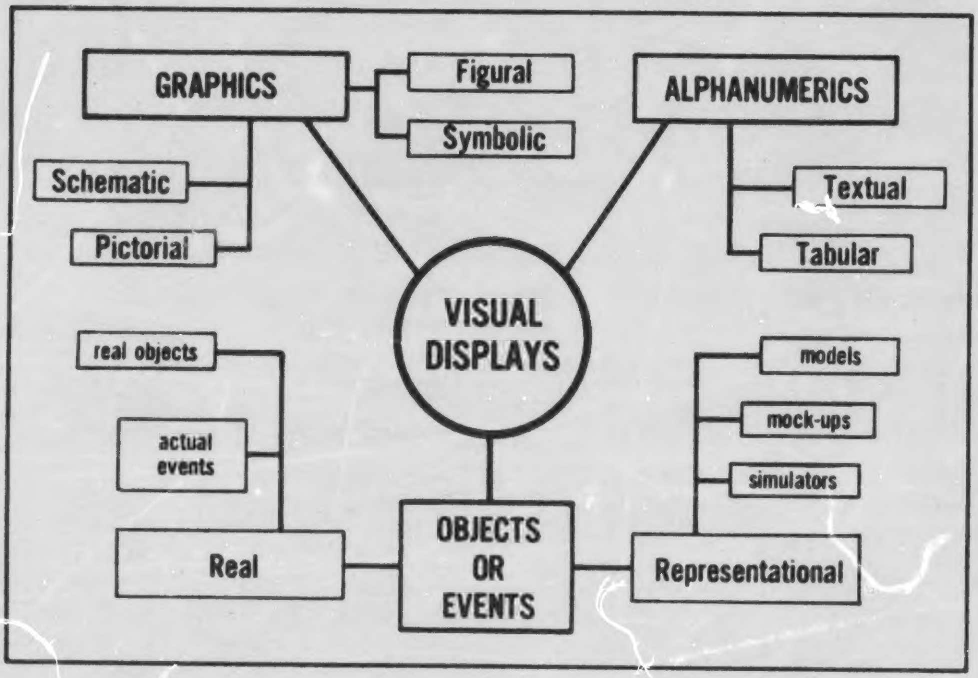

GRAPHICS
Figural
Symbolic
ALPHANUMERICS
Schematic
Pictorial
Textual
Tabular
VISUAL
DISPLAYS
real objects
actual events
models
mock-ups
simulators
Real
OBJECTS
OR
EVENTS
Representational

Figure 6. Integrative outline graphic, showing adjacent-component relationships.

events." This kind of display has many similarities to Pattern Notes (Fields, 1982; Norton, 1981) and is developed in much the same way. Like Pattern Notes, the integrative OG demands active visual involvement of the student in the contemplation of verbal content, perhaps appealing concurrently to both brain lobes.

OGs are not a panacea, however, for presenting verbal material in a visual form. Neither are they potent enough to overcome all of the cultural maladies which result in single-hemisphere involvement. Thus related forms such as flow charts, symbol diagrams, logic diagrams and non-numeric matrix display must be considered in the development of verbal-visual materials designed to stimulate whole-brain involvement (for a functional listing of these related forms, refer back to Figure 2.)

Wileman's Typology

Ralph Wileman in his book, Exercises in Visual Thinking, took a giant step toward facilitating future discussion of theories about a visual-verbal spectrum. He created an extremely useful typology that ranges from "pure verbal" (Type I) to "pure visual" (Type VII). The examples given by Wileman are for photographic slides, but except for the terminology, e.g., "reader slide" (p. 34), the seven types can be applied to any visual medium. Thus, if we substitute the term "image" for the term "slide", Wileman's types are:

- Type I . . . . "Reader" *image* (pure verbal)
- Type II . . . emphasized "reader" *image*
- Type III . . . "reader" *image* with visual cues to meaning
- Type IV . . . verbal/visual balanced *image*
- Type V . . . . pictorial or graphic symbol *image* with verbal cues to meaning
- Type VI . . . emphasized pictorial or graphics symbol *image*
- Type VII . . . pictorial or graphic symbol *image* (pure visual)

Verbally dominated visuals, as discussed above, are almost exclusively Type I, II, or III. With few exceptions all or part of their purpose is to visualize the verbal. Most often, their intellectual basis is verbal. Frequently the concept has an abstract component or there is an author's desire to clarify inter-concept relationships by giving special qualities to the subject.

Abstractions are most easily visualized with images on the verbal end of the spectrum. Conversely, concrete things lend themselves to easy visualization with images on the other end of Wileman's scale. Compare the two sentences below and the way they are visualized. Sentence "A" is composed of five abstractions (Figure 7). Sentence "B" contains five concrete concepts (Figure 8).

A. "Beautiful ideas have infinite value."

B. "Butterfly wings vary by shape, size, and markings."

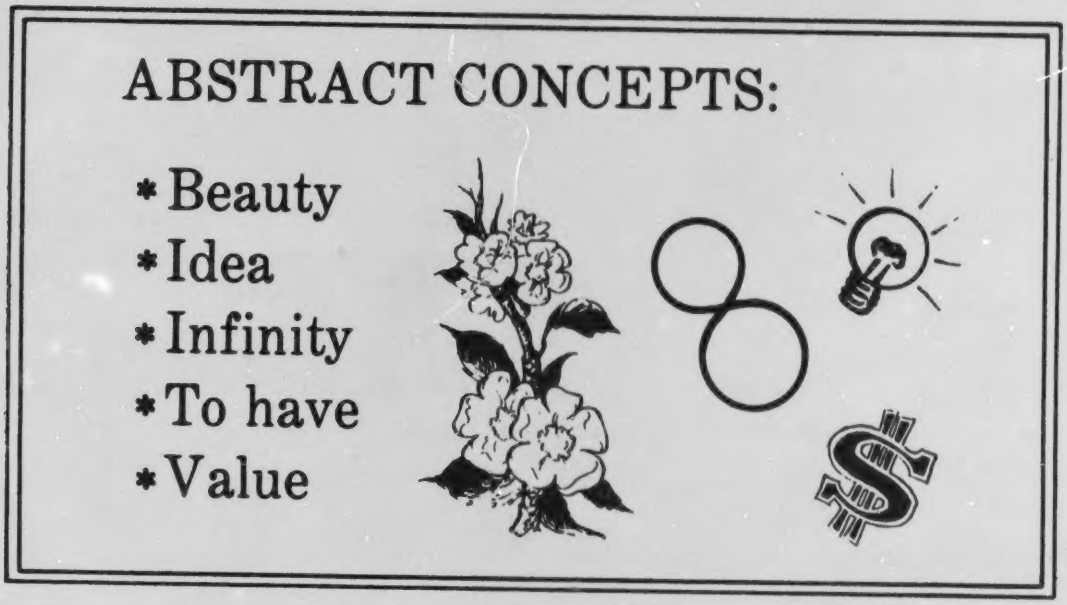


Figure 7. One possible visualization of Sentence "A."

Notice in Figure 7 that it was necessary to use words to convey the abstract thoughts. In contrast, no words at all are needed in Figure 8.

Verbalizing the Visual

Pure visuals include photographs, objects, and every kind of "art-work". Almost every thing can be used as or become the basis for a pure visual--that's the good news. The bad news is that as you approach the pure visual end of the spectrum, the meaning of the object shown or image displayed becomes increasingly fluid. Therefore, pure visuals should be used with caution unless they are described, interpreted, translated (if symbolic), intended for viewer interpretative criticism, or they are visual cliches. Visual cliches are those symbols and other images which have taken on strong enough stereotyped meaning to have widely accepted definitions in our visual vocabulary. The problem here is that our common visual vocabulary is woefully small. As Hartley (1978) stated,

> It seems likely, in fact, that there will be very few symbols that are unambiguously recognizable, and indeed, many symbols in current usage only work because of their verbal labels. The meanings of symbols have to be learned. (p. 56)

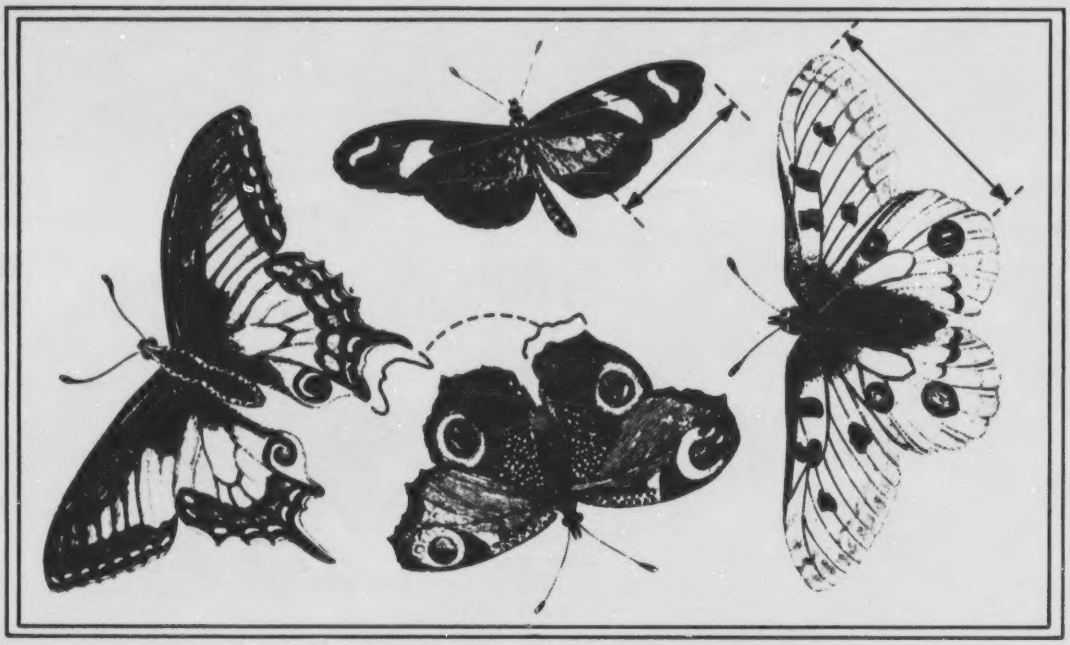


Figure 8. One possible visualization of Sentence "B."

Notice that Hartley does not criticize the use of verbal labels with visual symbols. When we refer to verbalizing the visual, we are apt to mean show and tell. Take for example the neighbor who shows vacation slides with a running commentary . . . "This is a picture of Aunt Myrtle feeding honey sandwiches to a Yellowstone bear . . . and here's one of Aunt Myrtle's bandages after she was mauled by the bear." There is more going on here than showing slides. Information is being added through the spoken word. Aunt Myrtle is introduced, named, and her relationship is made known. The ingredients of the sandwich are identified. The location is established. The bandages are explained, and much else could be done vocally to supplement the pictures. The commentary could be extended to a broader discussion of the folly of feeding park bears, the idiosyncrasies of Aunt Myrtle's behavior, or any other topic that has direct bearing on what is shown in the pictures. In format or instructional presentations, however, as long as an image is being displayed, subjects that aren't being shown should not be discussed.

Visual-Verbal Symbiosis

Keeping the images and the words together is the key to any visual-verbal presentation. When the effort is successful the result is visual-verbal symbiosis, a state of events wherein the visual component complements the verbal and vice versa. Symbiosis is not achieved only by dual-channel presentation of identical concepts (a picture of a house shown as the word "house" is spoken). The channels can and usually do enhance each other in many ways. One can be general and the other specific. One can provide the concept and the other the example. One can set the topic and the other can embellish it. *Any* symbiotic relationship between image and words will result in a stronger message than either channel can offer alone.

Unfortunately, the symbiotic relationship is frequently allowed to break down or may never become established in the first place. The result is *visual-verbal discontinuity* (Braden & Walker, 1980), a state of events where the messages of the visual and the verbal channels are in conflict with each other. Fleming and Levie (1979), citing the research of Severin, summarized the educational implications of visual-verbal discontinuity: "Multi-channel communications which contain unrelated cues in two channels will cause interference between channels and result in less information gain than if one channel were presented alone" (p. 62). The dissonance created by inter-channel conflict is cultivated in humor, advertising, and artistic production, but it is of negative value to clear, precise, and effective communication. Therefore, educators and communicators must constantly strive to create visual-verbal symbiosis. The trick is to achieve total visual-verbal balance. Since balance doesn't come automatically with either the words or the visuals, we should realize that whatever one channel lacks the other must furnish. Improving our ability to make the visual and verbal components more symbiotic means learning more about visualizing the verbal and verbalizing the visual.

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UTHENICS

by

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A Pattern for Change

The name derives from the Greek prefix ευ, meaning well, good, easy, appropriate. It is the prefix found in utility, utopia, euphoria, eureka. Euthenein in Greek means to thrive. Euthenics according to Webster is a science that deals with development of human well-being by improvement of living conditions. Uthenics is used here with the silent "e" dropped in accord with contemporary trends in the English language, and means to live and grow creatively in harmony with the human and natural environments.

Uthenics is a pattern for living in uncertain, changing times. It is an overview of the world and its collective wisdom designed to respect the relationships between human beings and the intricate environmental web that supports life on this planet. The need for a holistic approach leading to positive social and attitudinal change is understood and recognized by growing numbers around the earth.

Uthenics was formulated in response to the needs and concerns of young people expressed in their original statements. Each year since 1973 the school-age children of Canada were invited to send their ideas, their hopes and dreams, their joys and concerns to our Foundation. In letters, essays, poems, paintings and drawings, approximately a quarter of a million six to 18 year-olds declare an urgent need to envision and prepare for the times and conditions in the changing world ahead of them. As the effort to synthesize their comments proceeded, it has become apparent that the plan devised for educational change could be applied to a much wider range of human activity.

Children want to know how things fit together. They see the world from a different vantage point than their elders. From the beginning of their lives they have known the world as one system, a sphere, pure and shining blue in the cosmic black. They are puzzled by adult concern with boundaries, borders and divisions. They are bored with schools that teach old things unrelated to their own lives. Many express disgust--and some anger--with those who continue their polluting ways: "What's the reason for all that gold, when you and it will just grow old," age 12.

Children clearly think that over-kill, radiation, wasted resources, war and killing are wrong.

And which side of the family am I to thank
for my inheriting war, racism, pollution,

atom bombs and energy crisis
And the fear to have children of my own? age 17.

Young people want to learn how to live, now and in the future.

Open the pages. Stark black print
I've read enough of wars and sin
I want to read of living. age 16.

It takes an effort to disagree with them. Uthenics is designed to address their concerns. It begins with the individual growing from the center in relation to other people, in a time frame that includes past, present and future. Uthenics includes environmental touchstones and signposts to the wisdom of the world. Uthenics pinpoints creativity as the power by which new and better ways to live will be found. Having gotten us to the place we are, creativity, nourished and refocused, will get us where we are going.

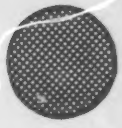
Uthenics recognizes that constructive social change begins with the recognition of individual responsibility in the change process. Thus the Uthenics learning program is based on cooperation within the group in a joint effort to find the "best" answers to "real" questions. Many individuals will have to change before the situation improves. Contemporary problems will not be solved by pitting students or adults against each other. The present emphasis on competition is too often destructive to the environment and other people, and too frequently leads to conflict, mistrust and exploitation. Techniques of cooperation will be developed as an important emphasis of the Uthenics movement.

Uthenics is designed to develop the potential of both right and left brain qualities and places strong reliance on enhancing the esthetic sense to assist in evaluation and decision-making leading to appropriate social change in a more harmonious world.

Uthenics recognizes the importance of traditional fields of knowledge, and calls upon them to act within the Uthenic model. The skills of reading, writing and arithmetic as well as a wide variety of practical skills are essential parts of education. We are concerned here with the contents of the program--what is learned, how it is used, and the effects of the knowledge when applied.

The five inter-related layers of Uthenics are:

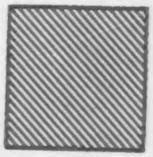
Self--at the center is the thinking, feeling, growing self. To appreciate it includes knowing about how it works, its needs and capabilities. Disciplines here include physiology, kinesthetics, nutrition, and health care: how to satisfy the needs for food, shelter, clothing, recreation, sexuality and belonging in ways acceptable to the society and in accordance with environmental possibilities. The intangibles of joy, loving, morality, ethics and spirituality also center on the self.



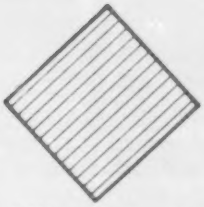
Others--the interaction and communication between the self and family, peers, community, nation and world. It includes understanding of the instruments of socialization, the institutions of government, business, education, the professions and religion, and the role and functions of regulatory agencies.

Time--in the continuum of time the past informs the present as the present moves into the future. Since the future is unknown, it cannot be taught in any conventional manner. But it can be envisioned using logic, thought, projection and the important techniques of "imaging" developed in space exploration.

Active consideration of the future is largely under taboo in the school curriculum. Its very unpredictability does not allow it to be approached in a linear fashion; answers simply are not known, and many of the questions are still unformulated. Teacher and student will be obliged to learn together recognizing that they start from different expectations for the future, just as they have different ideas about the present. It is possible that educators may see this situation as a threat to their authority instead of the opportunity to draw closer together with their students who see the future as expanding life. A program for "imaging" the future is vital to the interests and survival of young people. Not only will they live in the future, but they will be instrumental in shaping it. A way must be found to free the future of taboo and elevate it to a major position in the curriculum where it can be considered actively and its probabilities and possibilities fully explored.



Environment--to simplify environmental considerations it is useful to adapt the ancient view that all matter is composed of earth, air, fire and water. By equating fire as energy, a contemporary definition of environmental concerns emerges. What mankind does henceforth must be considered in view of its effects--on the earth which nourishes us and other living things, on the atmosphere on which all living systems depend, on the water surrounding the globe and flowing in the veins of man, plant and animal. Energy requirements are already recognized as an environmental imperative.



Wisdom--whatever humankind has learned so far is to become the shared heritage of all people. Knowledge will become increasingly available through world-encompassing technological developments in communications.

Uthenics calls upon us to seek wisdom wherever it exists, selecting the best of cultural and technological achievements while making our own considerable accomplishments available in exchange. This search will significantly simplify the quest for workable alternatives. We North Americans describe our intellectual lineage as "western" in terms of history, technology and belief systems, often ignoring how much we have assimilated from other cultures. Belief in our own superiority has prevented us from looking respectfully at the achievements of other peoples. For centuries Western colonial policy virtually prevented a return flow of ideas from the colonized people. It is time to look and learn. The search will provide mutually valuable information and contribute a respect for other ways, values and peoples. We should emerge from these deliberations with one global culture, infinitely rich.

Creativity--civilization proceeds from creativity. It is the universal capacity of humankind to meet problems, satisfy curiosity, conceive solutions, devise implements, institutions and belief systems. Creativity is the source of the arts, the sciences and technology, and has taken us from the cave to the space ship. Creativity gives substance to our desire for beauty, adornment, comfort and spiritual growth. Development of the individual's creative potential is a sound basis for meaningful use of leisure, avocation and pleasure in personal growth.

The multi-faceted creative process appears to be a predominately right-brain function. Free to develop creativity, one comes closer to achieving full potential, and perceives the patterns, esthetic qualities and harmonious relationships more clearly. The exercise of creativity tends to be a positive, constructive activity. As stated by Sir Herbert Read in Education Through Art:

> Destructiveness and creativeness are opposed forces in the life of the mind. To create is to construct, and to construct cooperatively is to lay the foundations of a peaceful community.

Uthenics includes a simple belief that raising the level of creativeness in a society will improve the human condition. As our achievements--past, present and future--rest within the great circle of possibilities which creativity has, and will, bring forth.

As a model for education Uthenics places the child with his or her natural curiosity at the center of the curriculum. It provides a context within which to consider themselves in relation to other people and the world we all live in. It is a framework to deal with life as children see it at whatever level of sophistication their understanding has attained. Uthenics is a change from the linear, unrelated, and fragmented school program to an interrelated system monitoring a changing world. It will require new kinds of learning materials including techniques for accessing information from a wide variety of sources. And it will require different motivations in teaching. While this suggests radical change and great expense, it cannot be as costly in the long run as the present system which is unable to keep pace with the changes in knowledge, the job market, family structure, communications, science and international relations.

Uthenics has special importance for the talented and gifted. It provides essentially unlimited horizons, challenging them to expand their special abilities within a holistic framework. Despite well-meaning efforts to accommodate these free spirits, bright children remain the most under-served segment of the school population. Not only is this a disservice to them, but society cannot afford to waste such valuable human resources. They are the

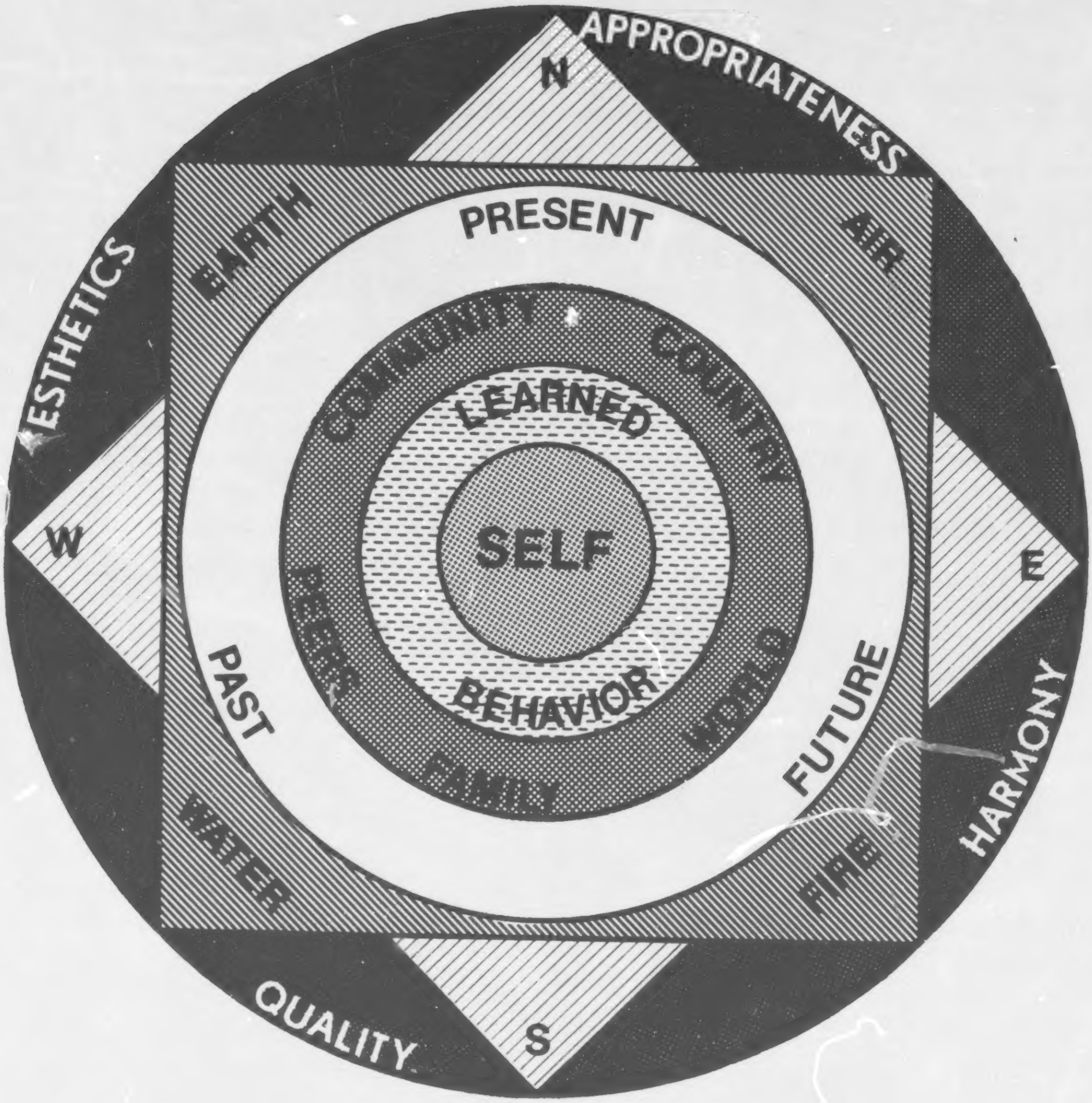

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Figure 1. Uthenics model.

ones who can most reasonably be expected to make innovative breakthroughs and intuitive leaps upon which the emerging future will depend.

As for the growing number of damaged children, let us look everywhere assiduously for causes and means of prevention. Meanwhile, the way we treat them is a measure of our humanity. Evaluation techniques for children is in urgent need of rethinking. The "learning disabled" are responsible for perceptive, innovative, insightful observations quite out of proportion to their numbers. They often seem to be right-brain victims of a left-brain system.

Knowledge disciplines pursued within a Uthenic framework can be developed to their fullest extent without danger of narrow specialization which has all too often added to earth's problems. By consciously keeping each of the Uthenic touchstones in mind, the individual in pursuit of excellence will be far less likely to cause damaging, unwise or irresponsible effects. When each aspect of human activity fits harmoniously within the whole, dysfunction will be more readily perceived and minimized.

It can be hoped that a Uthenic approach will enable humankind to proceed towards meaningful social change, cognizant of the environmental impact of one's work, respectful of cultural fit, and aware of the best experiences the world's people have so far discovered. Facilitated by rapidly expanding communications technology, input from persons of all ages and walks of life can be accommodated. We can all be teachers, learners and doers.

Unlike conventional linear education, Uthenics accommodates an expanding universe of space, time and knowledge. Evaluation and selection of appropriate practices presumes that individuals will act in their own best interests in cooperation with others. This is the moral imperative for our time. While the economic "bottom line" is important, it can no longer be attained through irresponsible plundering of the world's resources for immediate gain.

It is possible to recognize the interconnectedness of the planet now that PCBs are found in polar bears and penguins, and in the placentas of living things the world around. We cannot now look upon such work and say it is good, ethical, or even practical.

Uthenics is built on the perpetuation of life. It provides a compass within which each of us can acquire attitudes, skills, information and values that will allow the interrelated web of life to recover and flourish. The future demands that we execute dominion over earth with responsibility, care, love and respect.

BIOMETRIC RESEARCH INSTRUMENTS AND MEASURING TECHNIQUES

by
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The necessity to apply more progressive, diverse and precise measuring devices to communication media research topics has been the concern of several communication media research scholars (Behnke, 1970; Siebert, 1978; Metallinos, 1979; Fletcher, 1982).

Although it will be a rather difficult endeavor for those researchers who have come from predominately non-pure scientific backgrounds to comprehend the behavior of the human neurophysiological system as it relates to a communication model, it is important, as researchers in the visual communication media, that we acquire the necessary background and knowledge expansion in the physiological, neurological and psychological sciences, if we are going to seriously undertake communication research with the aid of psychophysiological instruments. The advanced developments in research techniques and measuring devices by other disciplines are available to those who make an effort to familiarize themselves with their usage and application. Such a positive step by the visual communication media researchers is now dictated by the need to prevent serious perceptual, cultural and aesthetic effects, to mention only a few areas, that these media might have on contemporary man.

In this survey, the major and most commonly used psychophysiological research instruments will be briefly discussed in connection with their application to particular communication media research topics.

Psychophysiological Research Instruments

The psychophysiological measuring techniques concern themselves with the covert or hidden responses to communication stimuli, such as detection of eye movements and dilation of the pupils, increase in brain wave activity, changes in pulse, pressure and frequency, etc. These covert responses are accompanied by measurable sensoric reactions or release of energy which are considered indications in level of activation, or state of arousal of the individual (Behnke, 1970). The ultimate purpose of communication media research that utilizes psychophysiological instruments is "to correlate physiological activation levels with various types of behavioral measures" (Behnke, 1970, p. 431).

"The various sensoric reactions and energy changes, due to information stimulation, can be detected, analyzed, quantified, and interpreted by accurate psychophysiological research instruments. . . ."

The various sensoric reactions and energy changes, due to information stimulation, can be detected, analyzed, quantified, and interpreted by accurate psychophysiological research instruments, all of which operate under a commonly shared measuring system. The system consists of three major components or operational procedures: first, the transducer or signal sensor which converts the primary signal from the subject to electrical signals; second, the amplifier or signal processor, which amplifies the weak electrical signal of the transducer; and third, the recorder or output indicator, which registers or records the electrical signal (Behnke, 1970).

Sensoric Reactors

All psychophysiological devices that measure visual and auditory perception stimuli belong in the category of sensoric reactors. Developed mostly in the field of perceptual (visual and auditory) psychology, the most commonly used instruments in communication media studies are the following:

1. The Depth, Size, Motion Apparatus. These are devices which measure various depth effects of phenomena, sizes of visual stimuli (Lafayette, 1980), and numerous illusions of stationary objects (Murch, 1973) or objects in motion.

2. Audiotory Processors; Audiometers. These auditory perception measuring devices provide an accurate graphic display of informational input in upper and lower threshholds of frequency and intensity (Lafayette, 1980).

3. The Tachistoscopes. These visual and eidetic devices measure high-speed visual projections of words, forms, and pictures, which can also be seen in parts (left visual field or left eye and right visual field or right eye) (Kimura, 1973).

4. Eye Movement, Eye Dilation, Recording, and Monitoring Devices. These are of two types: devices and methods that monitor the various "saccordic" and other eye movements (Young and Sheena, 1975), and those devices and methods that measure the dilation of the eye's pupil. The specific devices used, and the particular methods of measuring the eye movements, are discussed by L. R. Young and D. Sheena (1975). The most common eye movement measuring instruments are the Differential Reflection Reading Measuring Device and the Eye-Track. The more up-to-date devices used for monitoring pupil dilation are the Monocular and Binocular TV Pupilometer Systems (Koff, Elman and Wong, 1971; Gulf and Western, 1978).

Instruments Measuring Energy Changes

Psychophysiological instruments measuring energy changes of the body (due to information stimulation) have been developed mainly by neurologists, neuro-physiologists, biologists, etc., and are directed into four major areas, each of which have generated several devices.

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1. Physiological Instruments that Detect and Record Electrical Activity of the Brain. The most frequently used instruments are the EEG (Electro-Encephalograph) and the BWA (Brain Wave Analyser). While the EEG detects and measures the various "patterns" and "amount" of brain wave activity of a subject during varied states of stimulation, the BWA detects and identifies the neural efficiency of the subject, in terms of learning capacity and learning disability (Ertl, 1976).

2. Physiological Instruments that Detect and Record Skin Resistance or Response. The GSR (Galvanic Skin Resistance) and the GSP (Galvanic Skin Potential) are the most often used devices in this area. Both are indices of activation level changes in the subject's exosomatic (external) resistance of the skin (GSR), or endosomatic (internal) resistance of the skin (GSP). Among the communication media-related variables detected and recorded by GSR and GSP psychophysiological instruments are: alertness, efficiency, difficulty, information gain, group interaction, emotional impact of words or sounds, etc. (Behnke, 1970).

3. Physiological Instruments that Detect and Record Heart Beat Rate. These are instruments that provide registers of activation level in the human circulatory system. The most commonly used heart beat rate devices are the EKG (Electrocardiograph) which records the electrical activity of the heart muscle, the Sphygmograph, which records the arterial pulse contraction (systolic and diastolic) (Behnke, 1970), and the Stythograph, which detects and measures heart rate, and consists of an ultra-sensitive microphone, an electric amplifier, and a counter (Lafayette, 1970; Behnke, 1970). Studies which detect heart beat rates and that record subject's reaction to specific communication media stimuli, always correlate the findings of these devices with other such psychophysiological instruments.

4. Physiological Instruments that Detect and Record Changes in Muscle Tension. Although there are numerous advanced models in existence today, the most frequently used apparatus that detects and measures electrical energy generated by a subject's muscle contraction is the EMG (Electromyograph). Whether surface or intramuscular electrodes are used in the communication research test, the high and low amplitude muscle contraction is recorded in relation to the stressful or calm periods of the subject. In media-related studies, the findings of muscle tension indicators should be correlated with other such psychophysiological indicators for maximum validity and reliability (Behnke, 1970; Lafayette, 1980).

Volume-Change Instruments

Physiological instruments that detect and record changes in volume in various parts of the body are also indices of the level of activation in the circulation system, and specifically the automatic nervous system. The devices that detect and record changes in volume, in various parts of the body, are collectively called (PG) Plethysmographs, from the Greek word "plethos" meaning a great number or enlargement. The commonly used plethysmographs according to Brown, Giddon and Dean (1965) are: the Electrical Impedance

Plethysmograph (EIPG), the Rheoplethysmograph (RPG), the Girth Plethysmograph (GPG), and the Photo Plethysmograph (PPG). Several communication media-oriented variables which have been detected and studied by such plethysmographic instruments are recorded by Behnke (1970).

> *"A number of serious restrictions are imposed on researchers using biometric instruments to measure media-related variables."*

Restrictions in the Application of the Biometric Instruments and Measuring Devices

A number of serious restrictions are imposed on researchers using biometric instruments to measure media-related variables. The "signal-to-noise" ratio imposed by the instruments themselves is one such restriction. The need to "correlate the findings" (or graphic output) of one device with the recordings of one or more other devices on the same variable, is another restriction. A third restriction is the tendency of the recorder to "overgeneralize" on the basis of intricate readings of complex body mechanisms. Fourth, there is the need to perfectly match the initial levels of each subject's biological and physiological activities with those performed during the experimentation period. Finally, there is the need to understand the sensoric, thermal, chemical, and electrical changes of the human body as they relate to both the instrument that records such changes and the conditions under which such recordings occur. However, as Behnke (1970, p. 447) suggests, we should not overlook the application of biometric instruments in communication media research simply because they impose "serious problems and difficulties."

This paper and the two which follow were prepared as a collaborative effort. The three topics were presented at a single combined session. Nikos Metallinos was the senior participant in the collaboration. His review of major biometric instruments in use today was intended to set the stage for a futuristic projection. In that context, Kaller's paper introduces stereophonic television, and Bringolf contributes a discussion of holography. The combined session was titled "Holography and Stereophonic Television: New Dimensions in the Future of Visual Communications Media."

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STEREPHONIC TELEVISION: A SUGGESTED BIOMETRIC APPROACH TO MEASURING PHYSIOLOGICAL IMPACT ON THE VIEWER

by

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Stereophonic sound for television, already a reality in Japan and Germany, is now being developed in North America (Radio Japan News, 1979; Pro Sound News, 1981). If we are to be responsible communicators, it is essential that we examine and understand, with such an advancing technology, the advantages and/or disadvantages that stereophonic sound will have in television over the present monophonic system and what effect this dual-channel system will have on the viewer.

Stereo sound in television will not only give us sound with better quality but can offer us positional information as well as spatial dimension. This will occur since stereo sound is spread out across the perceptual space of audition rather than being localized to a narrow band directly in front of the listener, the way that the present monophonic TV sound is heard (Moir, 1959).

Since the research literature supports the application of the brain-sidedness model to communication functions (Kimura, 1967; 1973) and is extensive for receiving and processing functions of auditory communication stimuli (Bogen, 1974; Morais and Bertelson, 1975), it suggests that the neurophysiological approach, utilizing biometric instruments, is appropriate to a research problem regarding physiological impact between a TV program with a stereo soundtrack and the same program with a monophonic soundtrack. As well as the more advanced physiological or biometric instruments, a two-tailed t-test may be an additional communications measuring technique.

The following is a condensed outline of the problem, specific questions stemming from the statement of the problem, suggested methodology when biometrically testing a stereophonic program for viewer impact, and predictions and implications of stereo sound in television.

Statement of the Problem

"Are there significant differences in physiological impact between TV programs with a stereophonic soundtrack and the same programs with monophonic soundtracks?"

The specific questions that stem from the statement of the problem, to be biometrically measured, are as follows:

1. Is there a significant difference in the "pattern of brain wave activity" that takes place when viewing a TV program accompanied by a stereophonic soundtrack as compared to viewing the same television program accompanied by a monophonic soundtrack?

2. Is there a significant difference in the "amount of brain wave activity" that takes place when viewing a television program accompanied by a stereophonic soundtrack as compared to viewing the same television program accompanied by a monophonic soundtrack?

3. Is there a significant difference in the "types of skin resistance" that take place when viewing a TV program accompanied by a monophonic soundtrack?

4. Is there a significant difference in the "amount of skin resistance" (increased (+) or decreased (-) galvanic skin response) that takes place when viewing a TV program accompanied by a stereophonic soundtrack as compared to viewing the same TV program accompanied by a monophonic soundtrack?

Methodology

A suggested experimental design is Matched Subjects/Independent Groups. This design involves the following treatments:

T1 Group A will view a television program with a stereophonic soundtrack.

T2 Group B will view the same television program with a monophonic soundtrack.

Some major experimental conditions to be controlled should include: reverberation time of room, sound pressure level, speaker characteristics, distance of speakers from monitor, angle of speakers to ears, and distance of monitor and speakers to viewer (Bruel and Kjar, 1969; Meyer, 1973). Subjects should be tested one at a time and a minimum number of 20 subjects per treatment is suggested. Simple control factors to be considered are: sex, age, listening habits, physical hearing ability, random assignment to treatment groups, visual acuity, and screening ability (Plump, 1964; Backus, 1969; Mehrabian, 1976). In order to measure physiological changes, a number of data gathering procedures, biometric instruments, and a type of biometric test used to measure and record subjects' electrical activity and thermal changes due to the impact of the audio portion of a short TV program utilized as stimuli, must be taken into account (Malik, 1979).

Predictions/Implications

It is predicted that:

1. Pattern of brain wave activity, that is the kind of processing that takes place in the audio cortex, will be associated with alertness, activity, and arousal when stereophonically stimulated.
2. Amount of brain wave activity or amount of processing that takes place within the audio cortex of the brain, will be more significant with the stereophonic TV program.
3. Types of skin resistance, referring to positive or negative galvanic skin response, will be more significant with the stereophonic TV program.
4. Amount of skin resistance, pertaining to cumulative GSR response and quantity of typical invoked responses, will be more significant with the stereophonic TV program.

Therefore, it is predicted that there will be a significant difference in physiological impact on the TV viewer/listener, in terms of electrical activity and skin resistance, when presented with a television program with a stereophonic soundtrack compared to presentation of the same program with a monophonic soundtrack.

The above is only the first step toward investigating the advantages and/or disadvantages that this future medium of stereophonic television may offer the viewer/listener. Implications of significant physiological impact of stereophonic television can lead us further into perceptual, cultural, and aesthetic inquiries.

Since stereo television will have a broader frequency response and an increased dynamic range, this improvement might be helpful to individuals who have hearing deficiencies, especially those who have deficiencies in specific frequency ranges (Ray, 1977).

Stereophonic sound, with its increased number of cues over monophonic sound, would offer more imformation to the viewer and would therefore fall within the constructs of Cue Summation theory. Frank Hartman (1961, p. 24) suggests that there is evidence to support the Cue Summation principle in relation to multiple-channel media presentations and supplied strong support for his two hypotheses that predicted significant differences "in amounts of learning when information is presented over single and multiple communication channels." Potential educational value such as this should certainly be investigated.

The viewer/listener of stereophonic television will probably find the experience more aesthetically pleasing, since stereo sound, with its time-differentiated cues, will give us a better representation of depth and spatial cues, less listening fatigue, and more effective tonal quality. The sum of such advantages will give TV sound a more realistic and dramatic effect (Jordon and Cunningham, 1958; Moir, 1959).

Stereophonic television is an extremely fertile medium. In order for this medium to be used to its maximum capability, it is important for educators and researchers to properly investigate the various implications of stereo television so that beyond the amusement value, the perceptual, cultural and aesthetic potential can be realized.

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HOLOGRAPHY: A MEDIUM IN THE MAKING

by
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The term holography is derived from the Greek words "holos" meaning whole and "gramma" meaning message, the whole message. Today, holography means the reconstruction of three-dimensional objects in space. Space, in this case, is the space displayed by the projection, which is called a "space image." The phvsical reality of the holographic image takes place on a two-dimensional sheet of film but the image is itself a three-dimensional representation of a three-dimensional object. Unlike photography, holography does not record an image of the object photographed but rather records the reflected light waves themselves.

The principle of holography was discovered in 1948 by the Hungarian born British scientist, Dennis Gabor. Gabor's (1949) work in Photonics led him to experiment with rudimentary coherent light sources, primarily arc lamps, used in conjunction with a series of filters. He was able to obtain a basically monochromatic (one colour) light source by filtering out certain frequencies of light, the prerequisite to producing a hologram. The first primitive holograms were a result of these experiments with monochromatic light. Gabor (1949) published a paper on his findings and not until 1960, when the laser (Light Amplication by Stimulated Emissions of Radiation) was invented, did the holographic concept once again emerge. Holograms were commercially produced for the first time at the University of Michigan and interest quickly spread to research labs across the country. However, as with most new products there were numerous problems to be solved and the expectations of the general public were too high. Although excellent holograms were produced, the field plummeted and disappeared from the public eye (Collier and Len, 1971). Holography did not become popular again as a medium of communications until the mid-70's. Although scientists throughout the world conducted serious research to perfect the quality of holograms, their work was concentrated in the fields of optical holography and non-destructive testing (Erf, 1974).

> *"The main advantage of this new type of holography was in the simplified method of viewing...using non-coherent light such as sunlight or regular light bulbs."*

The major breakthrough came with the advent of "display" holography, a new form of holography which could be used by artists and educators, as well as communicators. The main advantage of this new type of holography was in the simplified method of viewing. Most scientific holograms need to be viewed with coherent light (such as Laser light) but display holograms, such as the Reflection, Multiplex, and Dicromate holograms, are viewed using non-coherent light such as sunlight or regular light bulbs. New techniques, films and chemicals now allow us to produce reliable three-dimensional reproductions of objects, inanimate or live (Jeong, 1975).

How then, does one produce a hologram (See Figure 1)? An object must be placed on a vibration-free table and evenly illuminated with laser light. Insert a special film plate, as close to the object as possible, between the light source and object. Expose and develop the film and the results will be a monochromatic reflection hologram. The procedure for colour holograms is a bit more complicated but one who has seen a colour hologram will testify to its perfect reconstruction of the three-dimensional object in space. The reaction of many viewers is to declare it an illusion, which it is not. The holographic object is an exact replica of the original except that it lacks inertia. The photographic emulsion has a third dimension, namely, that of depth on a molecular level (Smith, 1969).

Now we are faced with the question of what to do with this innovative medium of holography. We have found that with little effort, time, and money, we can reproduce three-dimensional objects on sheets of film...but for what purposes?

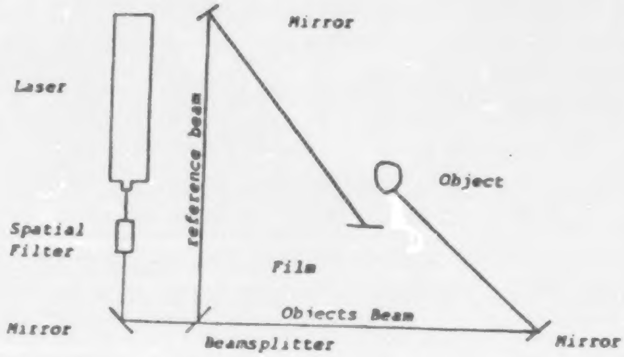
"Holography's use and value in the art and educational fields is extensive."

Today's society has found numerous ways in which to positively utilize this progressive medium. Holography's use and value in the art and educational fields is extensive (Wenyon, 1978). Many valuable art treasures have been put on holographic film and can now be shipped around the world to be viewed in three-dimensions by anyone. Instead of two-dimensional slides, films or prints of rare pieces of art, we can now obtain a three-dimensional replica and for a rather affordable price. It is important to understand that a hologram is a perfect reconstruction of the original object and can be examined with a microscope down to its molecular level.

The scientific industries use non-destructive testing methods and optical holography in their on-going safety and design research. Archeologists are using holography as a means to study rare findings. A hologram is made of the artifact so that the hologram, not the finding, is studied and handled. Medical schools in Europe use holograms to study and demonstrate human anatomy (Wenyon, 1978). Holograms are also being used in the field of psychology, and in particular, to aid people with psychomotor problems. One such test involves a hologram of small building blocks, in which a subject is asked to fit the real blocks over the holographic blocks. If the blocks are not properly matched, a halo effect is created around the block. The subject must match them until they blend in completely.

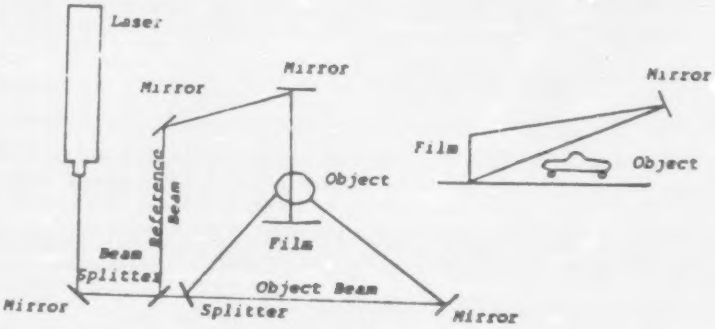
Karl H. Pribram (1971), a researcher in neuropsychology at Stanford University, focused his work on brain functions and largely favoured the use of experimental procedures involving surgery and electrophysiology. In particular, his studies explored the frontal cortex of primates, measured

MULTIBEAM TRANSMISSION:


Mirror
Laser
reference beam
Object
Spatial Filter
Film
Objects Beam
Mirror
Beamsplitter
Mirror

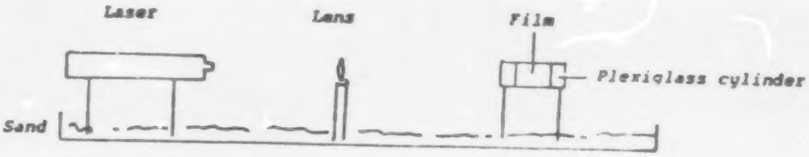
This set up allows you to use a number of beam splitters to create artistic lighting.
Beam ratio should be 4 to 1
Reference beam is always stronger

This set up is more or less the most common one used and results are very good. The most important point is to maintain temporal coherence i.e. the distance from beam splitter to plate must equal the distance from beam splitter to object, to plate. For artistic effects, one can use 2 or more splitters and a ground glass instead of a lens to dispense the beam to illuminate the object.


Laser
Mirror
Mirror
Mirror
Film
Object
Object
Reference Beam
Film
Beam Splitter
Object Beam
Mirror
Splitter
Mirror

This set up uses a raised reference beam. The angle was approximately 30°
Left is a side view of the reference beam in relation to the object

A very interesting and effective hologram is the 360° hologram which you can view on all sides. This hologram appears very easy to do as it is again a one beam hologram.


Laser
Lens
Film
Plexiglass cylinder
Sand

I found that in reality, this is a very difficult one to do.

Figure 1. Producing holograms.

attention by means of eye movements, and determined agents upon motivation. One of Pribram's (1971) major contributions to the development of holographic theory of the brain functions was his recognition that holograms can be constructed in infinitesimal layers with each bit of specific information being retrievable. Thus, successive holographic images superimposed on a single thick photographic plate would have the effect of storing billions of bits of information within a cubic centimeter. Pribram (1971) saw that this may be analogous to the brain's method of storing vast amounts of information within its relatively limited confines. In other words, holograms not only can store more information in a smaller space than the best computer, but they might also be a key to a better understanding of the brain.

As one can see, holography covers a wide range of applications. What has started as a strictly scientific field has found its way into our everyday life. As an artistic medium, holography has virtually unlimited potentials. What will holography offer us in the future?

"A holographic film is at least 100 times brighter than our conventional films projected on screens."

Active research is now being conducted in the U.S.S.R., Bulgaria, Europe and North America, to develop holographic cinematography, a form of cinematography with many advantages over conventional films (Weyon, 1978). A holographic film is at least 100 times brighter than our conventional films projected on screens. Three-dimensional action would give us such a feeling of reality that this could be called the ultimate illusion. Live action in holographic film could add an even greater dimension as it would be impossible to tell the live actor from the holographic actor. Careful blocking is important since the live actor is unable to see the hologram. The live actor could walk right through his holographic counterpart only to disappear behind him. Holograms also cast shadows. You may walk through a tree but once you are behind it, you are in the shade of it and therefore, no longer visible. Holographic cinematography opens up a whole new avenue for film makers. After film may come the distribution of holographic television to the public and after television . . . ? The possibilities are limited only to our imaginations.

We have only just begun to scratch the surface of the field of holography. A discipline as young as this needs more research in order to develop its aesthetic and educational potential as well as to understand its impact on the individual. The probability of holography becoming as vital a component in our lives as radio and television are today is quite plausible. It is for this reason that researchers and educators must now fully explore and examine the effects of this medium before it becomes part of the mass media.

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SILICON PICTURES:
A REVOLUTION IN VISUAL LITERACY

by

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Teacher's Nightmare

1990 Scenario

The year is 1990. Sam is a qualified, experienced, and registered teacher, and he/she wakes up excitedly to the buzz of a lunar-powered digital alarm clock. Today is Thursday--the only day of the week when Sam is permitted to work at his/her school.

As he/she hurries across the school campus towards the main office, Sam admires the tasteful way in which the facades of the old school buildings were preserved when they were converted to condominiums. The old library building has become a beautiful recreation centre with ice arena and squash courts. All library and classroom books, paintings, photographs, and slides have, of course, gone--recycled for fuel--but not the information they contained. This information has been preserved in the electronic and holographic memory of the gleaming "Info-Master," which is the size of a microwave oven and sits in splendour on Sam's desk in a room which used to be the cleaner's storeroom but is now the "I.M.C.C." (Information Master Control Centre). The desk is shared by the entire school staff--Sam and four others, one day a week each!

New student, Jo, enters the I.M.C.C. on schedule, with her/his parents, to receive an "information transfusion" from Sam. After admiring Jo's brand new portable paper-back sized, personal, solid state "C.T.V.S." (computer/TV.VDU/satellite-videophone), Sam connects it to the Info-Master and begins pressing buttons. In a matter of minutes, to the pleasing harmony of clicks and beeps with accompanying flashing lights, Sam transfers Jo's entire text, reference, and journal requirements for the twelve-year school program into her/his C.T.V.S.-- an equivalent of some 180 "books" (in the terms of the obsolete paper technology). The transfusion program does, of course, include the automatic phone-in update option for periodicals and revised editions.

If Sam, the space-age teacher, had done his/her work well, then Jo, the student, may not have to return to the Information Master Control Centre again for the duration of her/his course. In fact, Jo need not set foot again on the school campus.

"When any communication medium is used effectively, the audience becomes absorbed in the message it carries rather than being absorbed in the medium itself."

Microelectronics Revolution and Silicon Pictures

In recent years, gazing into the electronic crystal ball has become a popular pastime for writers with diverse backgrounds and interests (Martin, 1978;Evans, 1979; Gosling, 1980; Large, 1980; Gleason, 1981; Johnson, 1981; Jones, 1982). Several writers have likened the current revolution in microelectronics to the discovery of fire or the invention of the wheel. Many consider that microelectronics will exert a greater influence on society than the Agricultural Revolution or the Industrial Revolution. But different futures are seen in the same crystal ball. Some writers predict a Utopian future with reduced work and increased leisure; some see a computerized totalitarian society; while others urge politicians, businessmen, and educators to change direction urgently to avert catastrophe. Predictions for the future often appear fanciful, over-stated, far-fetched--and yet many of the things we take for granted today (digital watches, business-card calculators, sophisticated home videorecorders, and microcomputers) were not seriously anticipated by most people ten years ago. And these are just some of the products of the current microelectronics revolution. Of the many changes that the silicon chip has triggered, one of the most profound for those engaged in education and communication is a greatly enhanced capacity to create, transmit, store, and manipulate *pictures*. We have entered the age of SILICON PICTURES.

Evolution of the Silicon Chip

It started in 1906 with the invention of the electronic *valve*. Valves acted as gateways for electrons (or electronic "on/off" switches) and were linked together in circuits in such a way that the electrons could be made to carry information. Amplifiers, radio, and television became possible. But valves were relatively large, hot, slow to start, energy-hungry, and they frequently burned out. In 1947, the *transistor* was invented. It was also a gateway for electrons, but was smaller, cheaper, and more reliable than the valve--and was solid rather than vacuum-filled. But transistors still had to be linked together in circuits with wires or strips of metal. With the application of techniques drawn from photography and printing, printed circuits became a reality and electronic devices shrank in size and became cheaper to mass produce. Groups of electronic components were inserted into tiny printed circuit boards and the "I.C." *(integrated circuit)* was born.

Transistors contained materials, such as germanium or silicon, which were half-way between electrical conductors and insulators--they were semiconductors. And silicon just happens to be the second most plentiful element on Earth. There will never be a shortage! Silicon occurs in sand, clay, quartz and granite--and is a major part of your crockery, tumblers, and windows. Purified silicon forms the basis of the latest device in the evolution of electronic components--the *microprocessor* or *"silicon chip."*

Around 1960, it was found that conducting materials could be sprayed directly on to tiny bits of silicon when building up circuits. A silicon chip is really a microscopic printed circuit board built up on a tiny sliver of silicon which is smaller than your smallest fingernail. A single silicon chip may contain dozens of layers of razor thin slices of silicon with complex patterns etched on their surfaces. This is the microprocessor and may be equivalent in function to 10,000 or even 100,000 separate electronic components. And this tiny information-handler is getting even more complex. Beams of X-rays, atoms, and electrons now allow the building of chips which contain a million electronic elements (Evans, 1981)!

The new information technologies owe their very existence to these tiny chips of silicon. Large, complex electrical circuits have been reduced in size but with enhanced reliability. Not only can they do traditional tasks more rapidly and efficiently, but also those thousands of electron gateways in close proximity give electronic devices a kind of intelligence. They can respond to changing conditions by using an "if-then" logic. "*If* this happens, *then* do that." This ability has resulted in an enormous growth of the ability of electronic devices to store, process, and transmit information (see Figure 1).

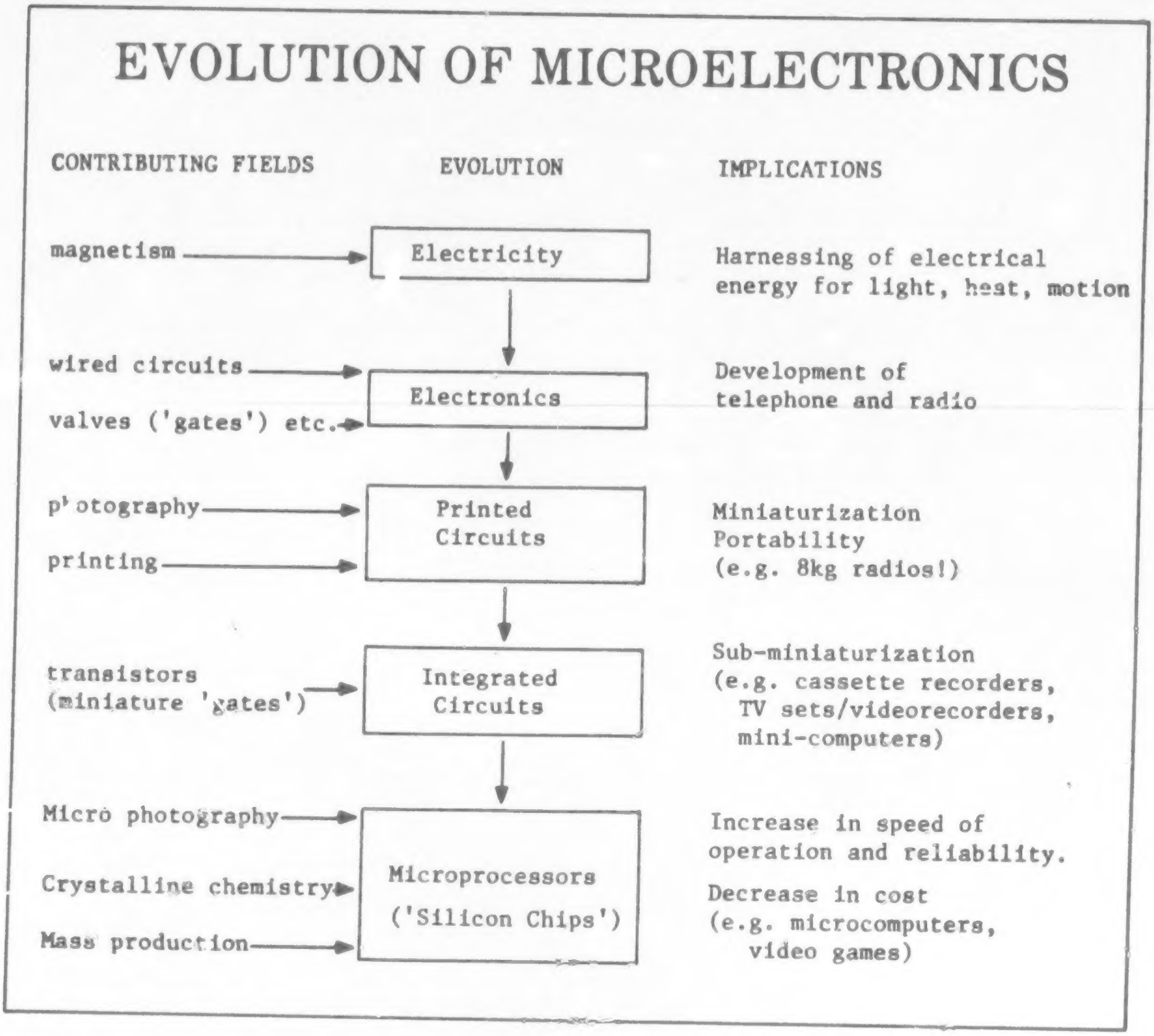
EVOLUTION OF MICROELECTRONICS
CONTRIBUTING FIELDS
EVOLUTION
IMPLICATIONS
magnetism
Electricity
Harnessing of electrical energy for light, heat, motion
wired circuits
valves ('gates') etc.
Electronics
Development of telephone and radio
photography
printing
Printed Circuits
Miniaturization
Portability
(e.g. 8kg radios!)
transistors (miniature 'gates')
Integrated Circuits
Sub-miniaturization
(e.g. cassette recorders, TV sets/videorecorders, mini-computers)
Micro photography
Crystalline chemistry
Mass production
Microprocessors ('Silicon Chips')
Increase in speed of operation and reliability.
Decrease in cost
(e.g. microcomputers, video games)

Figure 1. Evolution of microelectronics.

Storage of Information

Perhaps the evolution of media for storing information resulted from a desire by our prehistoric ancestors to improve on the memories with which they were endowed. Perhaps it was an urge to convert themselves from our prehistoric to historic ancestors. In any event, they did develop methods for storing information about their culture and passing it on to future generations, but the early evolution of storage media and methods was slow. It took thousands of years to move from cave wall to stone tablet to scroll to book.

Cross-fertilization from the separate evolutionary lines of photographic and magnetic wire technologies gave us videotape recording which has, in turn, spawned the videocassette and videodisc (see Figure 2).

Meanwhile, that tiny surprise package, the silicon chip, is steadily overhauling conventional means of storing information. This is largely due to its "electron gateway" nature. Imagine a huge cattle yard with tens of thousands of cattle pens, gates, and races. In this vast maze it might be possible--by opening and closing gates in a particular sequence as the cattle rush through--to sort out the animals in the desired pattern and to repeat that pattern each time you are confronted with sorting a new herd. A silicon chip is the cattle yard and electrons are the cattle. The entire sorting and storage takes place in a fraction of a second. And it works efficiently because the electron 'cattle' are extremely fast, distances are short, and the 'gates' are well-oiled. They are either open or shut; here or there--no in-betweens; no 'cattle' caught half-way. The multiple "yes-no" decision-making ability of the silicon chip is what gives it such an amazing memory capability. An average book could be stored electronically if about two million of these "yes-no" gateways are available (i.e. two million *"bits"* of information). Optical holograms, produced by laser beams, will increase information storage further still. The fictitious, oven-sized "Information Master Control Centre" in the "1990 Scenario" was obviously based on optical holograms. Gosling (1980) points out that a desk top holographic storage device could have a capacity of one million million bits. This would be enough to store up to half a million books--a reasonable sized university library!

"Human speech, that most ancient form of information transmission, and the gestures which accompany it, has always been limited by its transitory nature."

Transmission of Information

Human speech, that most ancient form of information transmission, and the gestures which accompany it, has always been limited by its transitory nature. ("What did you say?" "I think I said . . . ") The use of pictographic and verbal symbols in writing meant that information could be transmitted across time. Stone tablets, scrolls, and books brought portability. Messages could be 'sent' via relatively portable media. A quantum leap in information transmission occurred when Gutenberg's invention of moveable type was married to lithography. Printing was born and a 'hard copy' was available to many--the era of mass media had begun.

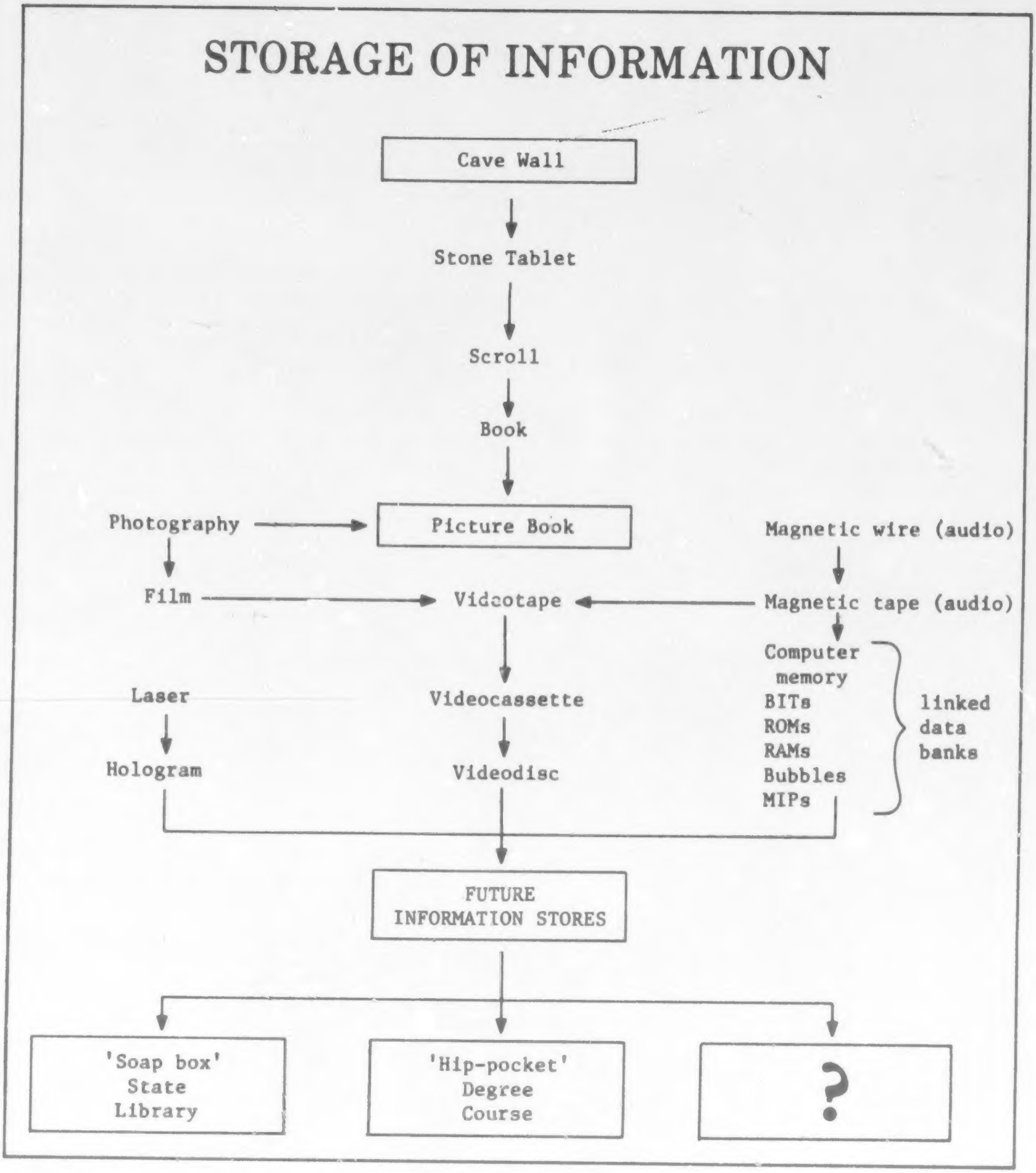
STORAGE OF INFORMATION
Cave Wall
Stone Tablet
Scroll
Book
Photography
Picture Book
Magnetic wire (audio)
Film
Videotape
Magnetic tape (audio)
Computer memory
BITs
ROMs
RAMs
Bubbles
MIPs
linked data banks
Laser
Hologram
Videocassette
Videodisc
FUTURE INFORMATION STORES
'Soap box' State Library
'Hip-pocket' Degree Course
?

Figure 2. Storage of information.

Today we can see a convergence of three separate evolutionary lines of information transmission. One line has been the transmission of invisible signals of an electromagnetic nature--from telegraph, telephone, and radio to early television and then on to current television with its satellite and cable feeds. Another quite separate development has involved signals which depend on visible light. We can trace this back to the first nonverbal gestures, grimaces and other forms of body language employed by our earliest human ancestors. Smoke signals, flags, lights, and reflecting mirrors have been used by many groups to extend the distance over which humans can communicate with visible codes. And, of course, recent developments in laser transmission and fibre optics have pushed this evolutionary line forward immeasurably. Short bursts of light travelling efficiently along hair-like fibers of glass, and the laser from the physics laboratory and science fiction stories may revolutionize our whole notion of information transfer (see Figure 3).

Scope of the Revolution

When we bring together the developments in information transmission from the invisible electromagnetic realm and the visible light realm and look at the way they are beginning to interact with books, newspapers, and typewriters, we are faced with the problem of *redefining* communication media. The boundaries are no longer clear. That television set in the corner of the living room could soon be much more than that. It may be a video display unit for the computer; a readout device for teletext, videodata, and our daily "virtual newspaper;" an integral part of our two-way videophone and interactive videodisc player; a terminal for our fibre optic service links to the local supermarket and bank; . . . and so on (see Figure 4).

The rate of change in the new communication technologies can be rather daunting and the scope of the changes difficult to comprehend. Johnson (1981) claims that "if during the last 30 years the automobile industry had made the same progress as the computer industry, a Rolls Royce would cost $2.50 and get 2,000,000 miles per gallon." But it would also be as small as the head of a pin!

Evans (1981) sees this information or computer revolution as the dominant force in society in the immediate future. It cannot be ignored.

> The Computer Revolution is the natural and proper successor to the Industrial Revolution, the significant difference being that we now move from the amplification and replacement of the power of muscles to the amplification and ultimate emancipation of the power of the brain. As with the Industrial Revolution it will have overwhelming and comprehensive impact, affecting every human being on earth in every aspect of his or her life. Again, paralleling its predecessor, the Computer Revolution will run at a gallop, though its time course will be shorter and its force may well be spent not in 150 years, but in 25. Thirdly--again note the parallel--the revolutionary process once under way will be unstoppable. (p. 13)

How is education responding to this irresistible force? Are theory and practice of teaching and learning being affected by technological change?

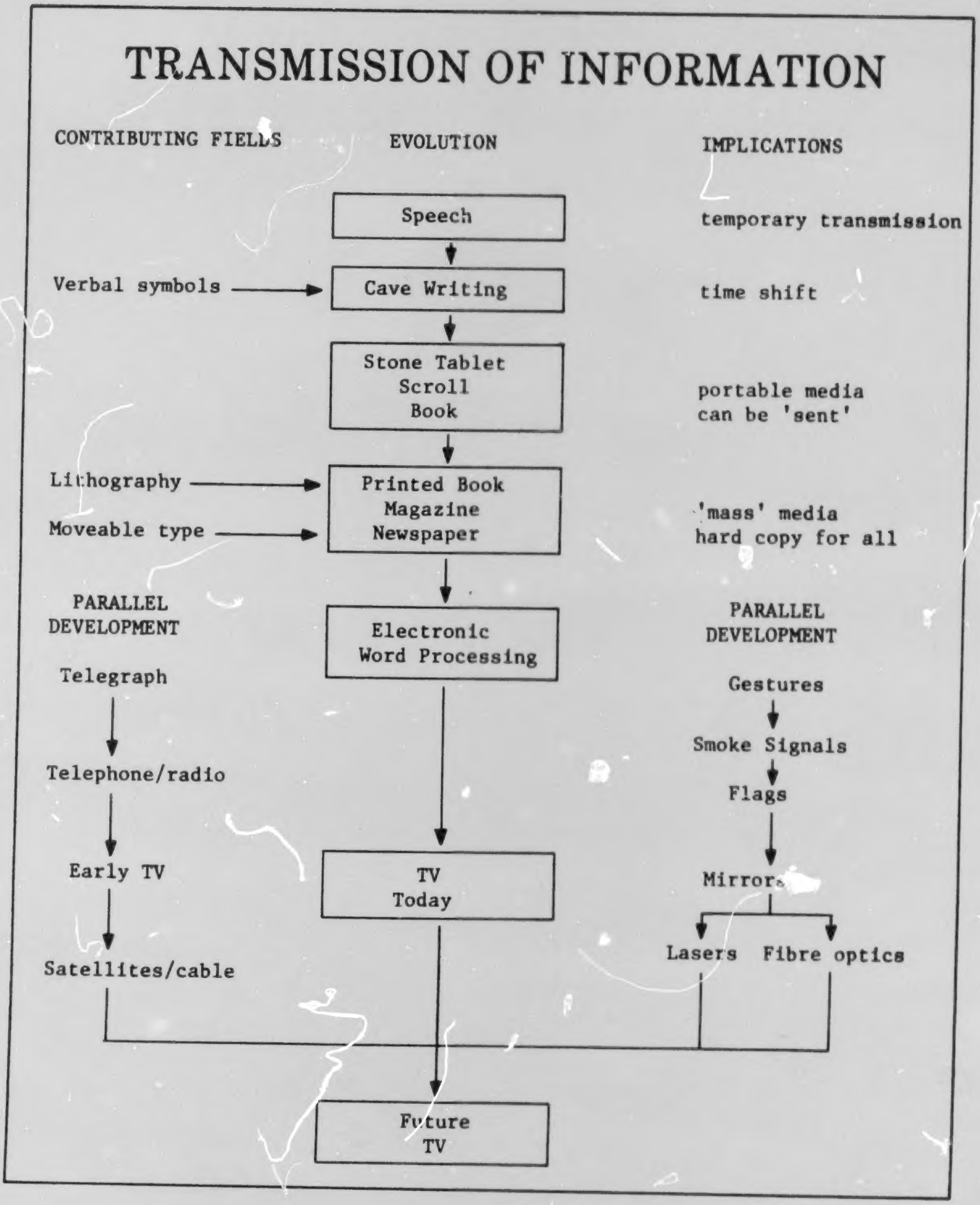
TRANSMISSION OF INFORMATION
CONTRIBUTING FIELDS
EVOLUTION
IMPLICATIONS
Speech
temporary transmission
Verbal symbols
Cave Writing
time shift
Stone Tablet
Scroll
Book
portable media
can be 'sent'
Lithography
Moveable type
Printed Book
Magazine
Newspaper
'mass' media
hard copy for all
PARALLEL DEVELOPMENT
Electronic Word Processing
PARALLEL DEVELOPMENT
Telegraph
Gestures
Smoke Signals
Telephone/radio
Flags
Early TV
TV Today
Mirrors
Lasers
Fibre optics
Satellites/cable
Future TV

Figure 3. Transmission of information.

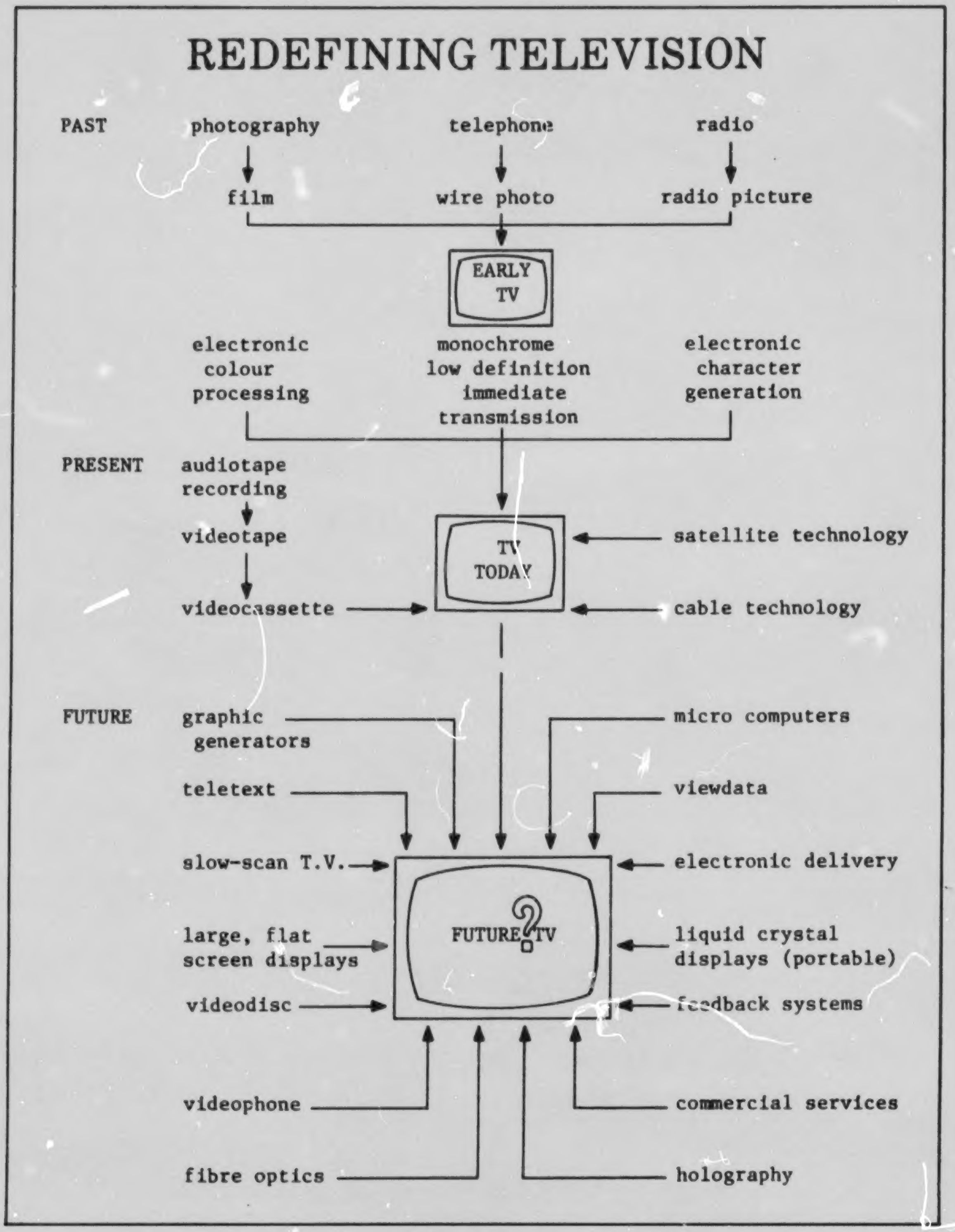
REDEFINING TELEVISION
PAST
photography
telephone
radio
film
wire photo
radio picture
EARLY TV
electronic colour processing
monochrome low definition immediate transmission
electronic character generation
PRESENT
audiotape recording
videotape
videocassette
TV TODAY
satellite technology
cable technology
FUTURE
graphic generators
teletext
slow-scan T.V.
large, flat screen displays
videodisc
micro computers
viewdata
electronic delivery
liquid crystal displays (portable)
feedback systems
FUTURE TV
?
videophone
fibre optics
commercial services
holography

Figure 4. Redefining television.

The Response by Education

If we were to take a quick trip in our Time Machine back across the centuries to visit a variety of 'schools' in many countries--we may be forced to admit that there has been almost no change in education for hundreds and hundreds of years. Certainly, there have been superficial changes in institutions of learning, but the basic ways in which information is imparted, transmitted, discovered, or shared have remained constant.

Obstructions to Innovation

In attempting to explain the tendency for educational establishments to reject technological innovation, Hooper (1982) has identified five contributing factors to this resistance:

1. Face-to face communication is considered by many educators to be the ideal form of communication. Technological substitutes are to be spurned.
2. Technology threatens teaching jobs. Recording and playback; publication and mass production; telecommunications and computing are all perceived as potential means for reducing the need for people.
3. Traditionally, educational institutions have been designed as elitist architectural spaces. Schools and libraries have always had a "come-and-get-it" attitude to their clients. New communications technologies threaten this position.
4. Productivity is seen as vulgar and commercial--and productivity is embedded in the language of many of the proponents of new technologies.
5. Education is a monopoly industry. We have state schools and independent schools; funding from governments, parents, and private foundations--but we are relatively free from the competitive pressures which force change in commerce and industry.

Coupled with these factors is the widely held notion that teaching is art and not science and that it is difficult or impossible to specify what you want to do before you do it. This view of teaching and learning does not sit well with the high degree of specificity implied by computer technology.

This is not to suggest that education is immune from the influences of technology. It is simply that for many teachers, the process of teaching is a private and isolated activity (Kerr, 1978). "Outsiders" are admitted as classroom influences with great reluctance. Wolcott (1977) describes this world view of teachers as a "subculture" and the intending innovator needs to take account of this perspective and its concerns. It is pointless to offer new technologies and strategies unless they are presented within the framework of classroom practice. Teaching is a practical activity and is often guided best by practice alone. If we attempt to introduce new technologies, but ignore the world view of the teacher and dismiss the obstructions to innovation

(Hooper, 1982) then we may find ourselves "scratching where it isn't itching"-- offering solutions to non-existent problems!

And we would do well to remind ourselves that awareness of new teaching techniques is no guarantee of acceptance by teachers. "Schools filter, slow down, and distort changes in such a way that they are gradually absorbed into existing practices" (Nunan, 1982). We should be prepared for evolutionary change rather than revolutionary change in our schools. But perhaps the tempo of that change is about to increase.

Unfulfilled Promises

For more than a decade, Educational Technology, Media Studies and Visual Literacy have made extravagant claims. Have they fulfilled their promise? Do they warrant places as legitimate fields of study? In a fascinating book entitled The Concept of Educational Technology: A Dialogue with Yourself, Richmond (1970) raises many questions about the field which are as relevant today as when they were written. He begins by questioning the need for Educational Technology and proceeds to argue for its fundamental importance in the theory and practice of teaching and learning.

> In my leisure time I happen to be a bird-watcher. Because I use binoculars, telephoto lenses, and computerized flash units--not to mention radar scanning for the study of migration--do I find it necessary to speak of ornithological technology? I do not. Why then, as an educationist, should I indulge in loose, pretentious talk about educational technology? Why should I go on, as I propose to do, and assert that educational technology is destined to emerge as *the* great central human discipline of the future. (p. 4)

Unwin (1981) says, bluntly, that he feels Educational Technology has not fulfilled its promise:

> The whole field of educational technology has so far been an expensive failure . . . because the term educational technology has implied something that has never been delivered; that is to say it implies an effective application of science to the problems of learning and teaching and the provision of effective ways of solving these problems. It is patently obvious . . . that technology--at least in the sense of *applied science* has been as alien a concept to the field of educational media and methods as it is to, for example, phrenology or sooth-saying. (p. 272)

Has Visual Literacy delivered what it has promised? Has it been effectively applied to real problems of teaching and learning? Or has Visual Literacy also been "an expensive failure?"

After delivering his stinging indictment of Educational Technology, Unwin does go on to say that he believes that the field of Educational Technology is on the verge of being able to live up to its claims because recent technological changes have greatly expanded our ability to move information around the world and to process and store it with cheap, reliable computers.

> Virtually anything that we have ever wished to provide for learners in the way of teaching tactics and strategy we can now accomplish by the use of microcomputers and suitable peripherals. (Unwin, 1981, p. 272)

These same microcomputers enable us to create and manipulate pictures in ways not dreamed of a few years ago. Computer graphics not only have a place in films of the Star Wars genre and the myriad video game descendants of "Space Invaders", but also in increasingly accessible microcomputers in schools. Many teachers have experienced the thrill of seeing elementary school children creating visual fantasies and solving visual problems with graphics programs in microcomputers. Many teachers are discovering new abilities to translate complex mathematical and verbal information into visual forms with data manipulation programs. New ways are being discovered for allowing microcomputers to interact with videodisc players and videocassette recorders. We have, without a doubt, entered the Age of Silicon Pictures. But perhaps we are rushing in too rapidly!

Basic Questions for Information Professionals

A perennial problem in Education is that the changes offered by a new communication technology are very often presented to us before we have mastered the previous technology. Have we, as visually literate information professionals, yet learned to use the chalkboard, the printed page, the overhead projector, photography, film or television as effectively as we might? Have we established personally satisfying guidelines for media selection and use? We are sometimes seduced by a new technology simply because it offers radical change in delivery rate, delivery distance or memory capacity--rather than examining how it interacts with the messages being communicated. Is there danger that wholesale adoption of the new electronic visual technologies will mean that some of the older visual technologies and strategies are in danger of becoming extinct? Will we continue to foster and develop visual skills associated with pencil, pen, paint brush and camera?

I would suggest that we need to return to some basic issues about the nature of visual messages and the limitations of media as well as keeping abreast of technological change. Perhaps visually literate information professionals, whether working with old or new technologies, could begin by addressing six fundamental questions.

1. DESTINY
   Where is this message going?
   Is the message intended for a mass audience or a smaller, specific audience? Does it involve broadcasting or narrowcasting? Does the message have a common core for all and options for special interest groups? Has anyone specified the aims, ends, goals, or objectives of the message? How do these aims affect the choice of content and selection of media?

2. FUNCTION
   What is the function of the message? Are particular pictures being used:

a) to gain attention

b) to explain, or

c) to enhance memory (Duchastel, 1978)?

Pictures in advertisements and on book jackets are usually designed to gain *attention*. Graphs, flow charts, and maps frequently *explain* ideas or processes--while on-the-spot photographs or sketches of people, places or events may help us to remember. In some cases, of course, the message serves more than one of these functions.

Did the designer of the message make his/her intention clear either explicitly or implicitly? Is there any evidence to suggest whether the message does function in the intended way?

3. MEANING
What does the message mean to the audience?
What does the message say at face value (i.e. what does it *denote)?* Are members of the audience in agreement over this level of meaning? Does the message include any hidden meanings, unarticulated values or conventions? In other words, what are the *connotations* of the message (Fiske, 1979; Jacquinot, 1979)? Does the message contain pictures which are interpreted by the audience as metaphors or analogies? Frequently, a picture of a familiar object or event can be used to explain a complex idea (Knowlton, 1955; Visual Education Curriculum Project, 1981). How can such visual analogies be created and how are they interpreted?

4. TECHNICAL CAPACITY
What are the technical capacities and limitations of the medium used?
Does the medium control the *sequencing* of ideas and concepts? Does it also control the rate of presentation? What flexibility is allowed in presentation? Are opportunities for interactivity given to the learner? Can the learner make the presentation of information faster or slower? Is it possible to rearrange the order of material presented? Can the medium *magnify* significant elements of the learning program? Can the medium assemble material from diverse sources (Maclean, 1968)? Is the medium user-programmable? If not, is there a simpler medium which can be used to model some of its characteristics (e.g. sequences of photographic prints can serve as a prototype for a film; VHS or Beta videocassette can model or imitate the random search and stepping functions of videodisc)?

5. HUMANITY
What are the human or social characteristics of the medium?
Does the medium have a high or low social presence (Short, Williams & Christie, 1976)? Does the medium appear personal, warm and friendly--or does it appear distant? Does it approximate face-to-face interaction? Is it user-friendly? How does the medium affect the apparent credibility, sincerity, integrity, empathy, and poise of the presenter (Baggaley, Ferguson & Brooks, 1980)?

6. VALUES
What values are embodied in the message or implied by the medium? Are values transmitted in the message stated? Are they implied? Is there any ambiguity or inconsistency in the value position? Is there any acknowledgment of value and beliefs as the instruments through which we look at and interpret the world (Schumacher, 1973)? Does the medium enhance or conflict with the value position of the intended message?

Changing Role of the Information Professional

Transparency of Visual Technology

Perhaps an important responsibility of those engaged in Visual Literacy is to work towards making the visual technologies *transparent* (Hutton, 1979). For a cyclist, a bicycle becomes transparent when the mind is filled not with the physics of balance and momentum but with winning the race, getting to the store or enjoying the scenery. To a competent reader, the words on this page are transparent. We look through the ink patterns and letter shapes to the meaning being conveyed. Pictures are most effective in classroom communication when teachers and learners focus on the meaning created from them. When any communication medium is used effectively, the audience becomes absorbed in the message it carries rather than being absorbed in the medium itself. And so far as the new technologies are concerned, our most effective use of computers, videodiscs, holograms, etc., will have to wait until we can look through and beyond the gleaming, glittering hardware. Information is more important then the technologies which store and transmit it. And people are more important than information. As Dupuy (1980) reminds us, we should never forget "that our main wealth is in man, in his power to marvel and his capacity to surprise."

"Information is more important than the technologies which store and transmit it. And people are more important than information."

Predicting the Future

In examining the implications of new visual technologies on future generations, educational decision-makers are in positions of incredible opportunity and awesome responsibility. But they will need to realize that the information revolution will be influential on learning with or without their support. Perhaps educators, the information professionals, should work to make the influence of new visual technologies on schooling as positive as possible.

Much of the educational futures forecasting which has occurred in the last decade has been what Wills (1972) calls Extrapolative Technological Forecasting. It is logical and involves the projection of existing trends to predict the direction and time scale of future events. Many people have analysed current trends and attempted to see where technology is taking us--and to prepare schooling for that destiny. For example, Papert (1982), in describing his computer-dominated "School of the Future" in New York, says, "What we're trying to do in this school is to create an environment that will move children from the present day in the *direction* of what schools of the future will be" (p. 89).

But maybe, as educators or information professionals or concerned members of society, we need not passively wait for 'experts' to extrapolate and predict the future for us. We could be more active. If we abdicate our responsibility and retreat from opportunity, we may see the day when the new communication technologies (with their awesome potential of expanding informational services to every home) actually bypass schools, teachers and educational administrators. And these technologies are being driven by powerful market forces.

Choosing the Future

Perhaps visually literate information professionals should be taking a leadership role in what Wills (1972) identifies as Normative Technology Forecasting. That is, forecasting, which first assesses future values, goals, needs, and desires--and then works out the best way to achieve them. For the first time in the history of the human race, we can use technology to give us whatever we want. We can re-make the world. Jones (1982) stresses that "we must assert the right to choose appropriate types of technology at our own pace, and to express a preference for those which enhance and extend human capacity, dignity, diversity, and understanding."

We have entered a new Age of Silicon Pictures. The power of the visual is not only taking new forms but is also becoming more accessible to more people. Technology can give society almost anything it wants. Let's work out what we want.

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M U N G:
MAKING THE COMPUTER TALK BACK

by

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The basic focus of this paper is computer-assisted instruction (CAI) from the instructor's point of view. Much has been and is being said about the educational values of CAI for the student, but very little about the joys and difficulties that it has for the instructor. I want especially to focus on the joys, because I think that programming instructional material can be an especially creative and renewing experience for the instructor, at least it has so far for me, and in a special way because of the visual component which it can employ. It seems to me, then, that the best way for me to reveal the joys of the experience is to retrace my own excursion into the land of electronic combustion, and I ask you to note that at nearly every step of the way it involved a visual component.

My first adventure amongst the bits and bytes came in the form of a game--of course. About five years ago, not long after the College acquired its Digital PDP 11-35 mini-computer, the manager of the bookstore challenged me to a game of HORSIE. HORSIE was an ingenious version of horse racing that included all of the appurtenances thereof: odds, betting, and watching the horses (strangely shaped like little stars) racing across the screen. Being somewhat conservative, I decided only to bet small amounts on the horse with the best odds. After 5 games, I had won $11,000,000, and after 17 games I was a millionaire. As you may well understand, it occurred to me that I had something going for me. My next adventure was a very complex version of a game called Star Trek that involved reading quadrants at various scales and tracking down Klingons for the purpose of zapping them. Oh, the vicarious joy of it all. Shooting off photon torpedoes and radiating gleeful spurts of phaser power. But then tragedy struck. The fateful day came when I had managed to zap all the Klingons before my weapons were exhausted, and the Klingons hadn't even touched me. My score was a great big 1000. The tragedy was, I had beaten the computer at its most challenging game (we didn't have chess, yet). What was I to do?

Wandering like a lost soul in a potential paradise of creativity, I bemoaned my outcast fate, and started misbehaving. With nothing to challenge my attention, I went exploring, in search of danger. I started reading other peoples' file directories, looking for unprotected, unsuspecting files to read. I was a raider of a vast new ark. And lo and behold, I found an innocent victim, a neat little file that made absolutely no sense to me at all. It had about 25 numbered lines, each line starting with a number larger than the previous line. I called on my great powers of deciphering and decided that a statement like Print "Walk" meant--tell the computer to print "Walk," so I decided that this must be a program and that if I copied it into my account I could experiment with it. I can't remember exactly what it was called, but I think it was called "JUMP." Let's call it JUMP. Well. What to do with my ill-gotten goods! About all I knew about computer programs was that you *RAN* them. So why not. I entered RUN JUMP and, lo and behold--things started happening. I felt like a kid about to pilot a rocket to the moon. What happened was not all that impressive, but that didn't matter. I was running a program; the great magic machine was responding to me. So what did happen? What did JUMP do? It went:

```
        WALK, WALK, WALK,

                        JUMP

                             *

                                 *

                                    *

                                        *

                                          SPLAT
```

I was hooked. If computer programming was that easy, then it was for me.

My marauding explorations had landed me on a new plateau. The creative promise of electron land was starting to fulfill itself. Onward and inward. The first steps were very tentative. I ran JUMP and re-ran JUMP, and re-read it, and decoded it further, and made a few cosmetic changes, discovering by trial and error, what I could or could not get away with. And I was amazed to discover, when I tried something the computer didn't like, that it squawked back. So I was involved in a kind of rudimentary conversation. And what was the topic of conversation? Grammar, especially syntax. Sometimes the computer would bluster "Illegal Verb!" and at other times it would blurt "Unrecognized Syntax!" Hm. What was going on? I thought I was in a whole new wonderland--and here I was--back at my regular job.

Well, if the computer knew grammar, so did I. So I decided, one Christmas in San Diego, between trips to the desert and Disneyland, to learn BASIC from the manual. And so I did.

The next step, the new plateau, was mastering a special language--a language within a language. Our PDP11, which I had learned by this time to call RASTUS (short for Resource-sharing, time-sharing), was equipped with DECAL or D.E.C. Author Language, a non-programmer oriented, teacher's language for doing quizzes and conducting students through guided reading lessons. I managed to compose a series of lessons, based on Alan Dawe's *Four Approaches to Prose* for use in one of my composition courses. This was very much an eye-opener of an exercise because it forced me to anticipate all sorts of students' reactions--not a bad activity for a teacher.

One thing I learned distinctly at this point was the need for humor. What inspired my next stroke of genius or luck, I don't now remember, but the use of faces--for smiles and frowns on the terminal screens, obtained very positive responses from my students.

Because DECAL was very simple for writing and editing, I made some alterations to my composition lessons to include faces, and improved thereby the willingness of students to do the lessons.

In the meantime, I had progressed in my understanding of BASIC enough to discover that DECAL was actually written in BASIC, so I decided, fool that I was, to make some alterations in DECAL for our local system, in order to make it even more acceptable both to students and to teachers.

To make alterations to DECAL, I had to learn yet another language--a text editing language. At this time, our system was using TECO (short for text editor and corrector)--a very powerful language which actually had full programming capabilities. Now I was really hooked, because TECO used such an exotic command set that one actually had to compose the language itself to make it work, and that somehow appealed very strongly to the latent poet in me.

So, in the process of updating DECAL by means of TECO, I became inspired, of course, to create my own language, which I now have in bare prototype, and it incorporates the simplicity of DECAL's lesson design, based on anticipated right and wrong responses and unanticipated responses. It also uses as a primary element, a talking face, in order to generate an affective response. So my journey into electron land led me ultimately to a confrontation with its own special creatures--creatures that were potentially there, but came out as beings of my own devising. At this point, it is a moot question as to whether they have me in thrall or the reverse, but I do continually remind myself of the fates of Dr.'s Faustus and Frankenstein, and so have equipped myself with an ejection seat should escape become mandatory.

Lack of resources has prevented full development and use of this language, so in the meantime I have been developing teacher-oriented command sets for the VAX which we now have, in order to make programming a more personal experience for the non-computer oriented teacher.

And now I would like to introduce you to the most developed of my electronic creatures. His name is MUNG.

```
          ((( )))
      *             *
   *                   *
  *                     *
  *        0  0         *
  *         ..          *
   (      (====)      )
     (              )
           V V V
```

VISUAL LITERACY AND THE MICROCOMPUTER: CHILDREN, THE APPLE COMPUTER AND LOGO

by
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Introduction

Visual Literacy, as usually defined, is reading and writing visual sequences. As usually assumed, those sequences will be of images on film, video, or paper--motion pictures, slides, video tapes, and drawings. The computer language, LOGO, provides a fresh view of visual literacy and what that concept might refer to beyond what has already become traditional. It is the author's belief that visual literacy is an important concept and that small computers in schools being used for learning is an important phenomenon. In this paper, the idea behind LOGO will be briefly reviewed, a report of a computer camp will be presented, and some relationships and implications between children's learning through LOGO and related computer uses and visual literacy will be explored.

Children and Computers

"You learn more when you make mistakes." This spontaneous, epistemological observation of a fourth grade student at the University of Oklahoma Summer Computer Camp, 1982, is typical of the comments made by children as they learn to program microcomputers. Children think about thinking, as Seymour Papert suggests, and they think in ways that enhance learning and problem solving. Rather than learning about mathematics, science, writing, and thinking, children should learn to do them. When using computers in specific ways, children can become mathematicians, scientists, writers, composers, and thinkers. With certain computer uses, children can come to possess abilities within all of these domains to a depth and with a quality hitherto reserved only for the gifted within a single specialty. The magic lies both within the phenomenon of human/computer interface and within the particular attributes of LOGO and other applications of computers for learning which resemble LOGO in configuring the computer for assisting the learning of a field by facilitating the doing of it (not "learning about being a scientist," but "learning science by doing what scientists do").

The use of computers in homes, classroooms, and in short, throughout our culture, is no longer merely a theme of speculative writing and science fiction. Computers are employed today in all aspects of society and schooling. Computers are found in the secretary's office as well as in the kindergarten room. The primary use of computers in elementary classrooms has been for computer assisted instruction (CAI). There is no doubt that CAI can be an effective method of instruction in almost every subject area, and teaching children to use the computer to help them learn specific information is an efficient, effective instructional approach. However, teaching children to use the computer to help them think can be even more valuable. If children learn to program the computer, they can then use the computer to help them think.

"If children learn to program the computer, they can then use the computer to help them think."

The aim of our Computer Camp was to give children power to understand and control the computer. Goals included: 1. to give children the opportunity to interact with the computer, 2. to teach children programming skills, and 3. to begin to develop a model for teaching programming in the elementary school.

Of the three goals, the second is the most difficult, given the assumption we made, that children of all ages can learn to program computers. Until recently, the problem with teaching programming to young children has been that the widely used, well known programming languages, such as BASIC, FORTRAN, and PASCAL are too complicated for children. Now, however, computer languages are available specifically for children's use. Foremost in current use is LOGO.

LOGO can be thought of as an environment for learning in which children act on the world of LOGO. They can change it, rearrange it, discover new things and create different things. With this language even young children can create interesting and meaningful programs in their first session with the computer.

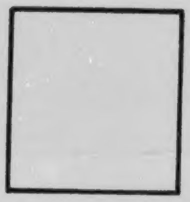
Some of the attributes of LOGO include:

1. it requires active involvement of students in the entire process
2. it is motivating and enjoyable
3. it maintains student's attention
4. it is easy to use because students work at their own pace
5. it provides successful experiences and helps build confidence in students

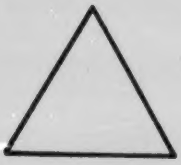
A Synopsis of LOGO

Developed at the Artificial Intelligence Laboratory of the Massachusetts Institute of Technology by Seymour Papert and associates, LOGO is a language children can use to program a microcomputer and at the same time learn certain concepts of mathematics and principles of physics. LOGO is easily used by five- and six-year old children. The basic commands can be learned during the child's first encounter with the program; the experience helps provide a sense of accomplishment and success for the child. The following are three simple examples of LOGO programs and their respective screen displays.

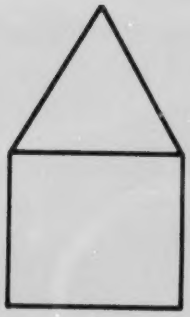
```
TO BOX
FORWARD 50
RIGHT 90
FORWARD 50
RIGHT 90
FORWARD 50
RIGHT 90
FORWARD 50
END
```



```
TO TRIANGLE
FORWARD 50
RIGHT 120
FORWARD 50
RIGHT 120
FORWARD 50
END
```



```
TO HOUSE
RIGHT 90
BOX
RIGHT 30
TRIANGLE
END
```



The child "teaches" the computer new procedures based on what the computer can already do. Notice that HOUSE is composed of previously "learned" procedures BOX and TRIANGLE. Next the child may decide to create NEIGHBORHOOD.

The Computer Camp

The Computer Camp, held in the Microcomputer Teaching Laboratory of the College of Education at the University of Oklahoma during a three-week period in August, 1982, was offered to children ages 7-12. Completion of first grade was the only prerequisite for enrollment.

Daily activities consisted of instruction in the basic commands of LOGO and Antfarm (a LOGO-like program developed by Jaques LaFrance of Oral Roberts University designed to teach principles of efficient computer programming), followed by exploration and experimentation with the various commands. Each child worked with a partner and received individual assistance with respect to his/her specific needs. One Apple II computer with disk drive was used by each pair of children. Children saved their programs onto floppy disks and were encouraged to record their programs in individual notebooks along with personal notes regarding their experiences with the computer. A discussion period was held during the last five or ten minutes of each day's work.

At the close of each daily session, the instructor presented puzzles and brain teasers for unrequired "homework." Prizes were given to all children for even attempting to solve the puzzles. Those children who solved the problems received a tip of the hat. Emphasis was placed on the process rather than the product. Everyone was a winner, including the teacher. Soon the children posed puzzles and problems for other children and the teacher.

All children learned to use LOGO and Antfarm. The amount of learning, as judged by the teacher, co-author of this paper, and an experienced elementary teacher for whom this workshop was her first experience teaching children to use computers, was impressive and something of a surprise. Perhaps the best way to present results of the camp is to list the responses and comments of the children taken from a simple questionnaire administered on the last day of the camp to two of the groups (34 children):

1. "Things I liked best about this class were:"

choice	number of children
Computers	9
Learning to program	8
Teachers	6
Games	4
Friends	3
Getting your own disk	3
Breaks	2
Air conditioning	2
Everything	1

2. "Things I would like to learn to do on the computer:"

More programming	19
Homework/schoolwork	4
Everything	2
Draw	1
Use game controllers	1
Learn to type better	1
Undecided	4

3. Comments written by children in response to the question, "the best thing was:"

"after you're done you get something neat"
"making your own programs"
"the best thing about LOGO is I can control it"
"how to control the ant"
"fooling around"
"easy to give commands"
"you are able to tell it what to do, not what it wants you to do"

4. Comments written in for the question, "I learned . . . : "

"your computer is very DUMB"
"you have to tell the computer what you want it to do"
"it gives you a good feeling when it works"
"figuring things out in my head"
"endurance"
"you have to tell it exactly what to do or it won't do it"
(about BASIC) "it's something you can do on your own"

Implications for Visual Literacy

What happens when a child, using LOGO, makes the computer draw an image? Specifically, what happens in terms of cognitive process? And what might the implications be of such activity for education in general and visual literacy in particular?

It would appear that the essential cognitive processes involved in using LOGO to draw a picture are: (1) the transformation of an image into a set of discrete operations, expressed in a language to make the computer generate an image, (2) viewing the resultant image and comparing that with intentions, and (3) making judgments about the fit between intention and results, and if the image is not what was originally desired, to: (a) analyze the discrepancy(ies) between intention and result, (b) analyze the instructions given to the computer to find what produced the unanticipated/unwanted result, and (c) generate revisions to the original instructions in ways intended to achieve the desired image or to make a revision of the original intent to make, for example, the house a "better" one than originally conceived. The thought and behavioral processes involved seem to these writers to be very like those of a person engaged in writing the draft of a paper for IVLA on a yellow pad, reading the draft, revising it, and in general developing the paper through the interaction of imagining, doing, looking at the results, and thinking through the next layer of possibilities.

"Generation of an image through a set of discrete, language-based commands representing operations imposes a substantial change on the child's cognition compared with that which is normally invoked in making images, such as through drawing."

Generation of an image through a set of discrete, language-based commands representing operations imposes a substantial change on the child's cognition compared with that which is normally invoked in making images, such as through drawing. This shift in cognitive "mode," if you will, may be analogous to that of shifting from speaking to writing. Working with a computer may be a unique instance of this particular mode shift in the creation of images. Even the familiar "Etch A Sketch" toy, in which pictures may be etched on a powder-covered screen by turning two knobs (one knob for vertical pen movement, the other for horizontal) involves analog processing in real time. The stylus in an Etch A Sketch moves in relation to how much a knob is turned, while the knob is being turned. Critically relevant aspects of working with LOGO are that programming is performed in discrete steps and that the image is produced upon delayed execution of the instruction set which the child has developed for the computer.

Research based upon the above concepts and assertions would well be carried out by people with a background and interest in visual literacy, both for the benefit of children in educational programs using computers in schools and for the benefit of the visual literacy movement itself in making a new kind of progress in understanding visual languaging. Clearly, language behavior is involved in making a computer generate images through programming. Our traditional assumptions about what "visual language" entails are turned around. Rather than a sequence of images being used to express a concept, with LOGO a sequence of verbal/mathematical statements are used to generate, typically, a single image. Only the concept of sequentiality remains--consistent with Debes' repeated assertions on the centrality of sequence to visual literacy.

> *"Clearly, language behavior is involved in making a computer generate images through programming. Our traditional assumptions about what 'visual language' entails are turned around."*

Working with LOGO imposes a rigor on children's minds, much as does learning to speak, read, and write. To a great extent, learning to speak is a socially imbedded process, achieved by virtually all children despite the enormous demands which learning to speak imposes upon the child. Undoubtedly, computers are "in" right now, and one could assert that the interest, excitement, and achievement asociated with children learning with LOGO and other LOGO-like programs and languages is a fad. If the learning phenomenon is just because computers in the classroom are new and if computers are not here to stay, the phenomenon of remarkable achievement by young children in learning to program could be analogous to previously observed high levels of skill among many children in the 1950's with the Hoola Hoop.

It does not appear that either computer technology or our uses of that technology is a passing fad. To the contrary, there is every reason to believe that advances in computer technology will continue and even accelerate. Since computers are information processors, all advances we see in that technology will bring with them advances in our ability to process information and to learn about information processing and even thinking itself. As

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computers get "better" both our ability to solve problems and the power of the tools we have available for use concomitantly increase. And, drawing from the initial and accelerating adoption and success of low cost micro and mini computers in homes, schools, and businesses, the increase in human ability to solve problems will be further democratized. It is in the democratization of an increasingly powerful class of tools for thinking and problem solving that the authors see a deeply significant potential for schools to achieve more of what they have wanted to do all along.

The relationship between working with a computer using LOGO (and the "LOGO-like") and visual literacy (in its traditional sense) lies in the mutual relationship both have to verbal language and its contribution to human capability. Language--the old familiar talking and listening and the more recently democratized abilities to write and read--makes us "smarter" than we would be without it. Ragan (1977, 1978, 1979) has been among those who have asserted that a "human capability" rationale for visual literacy curricula should be developed and investigated in depth. It is in the same vein that we see the current work with children and computers in schools. Such work is most productively viewed, we believe, from a languaging perspective because not only does the languaging perspective seem to fit the case, but also because of the deep-running relationship between language and human capability. Just as the language systems developed by humans millenia ago are tools which humans are well-suited to using because of the way humans are "wired," so seems the development of computers. Computers are another system we have developed which enhances our own further growth and development. In other words, we are "wired" to use and thrive from our interactions with computers. People have evolved and are evolving a new thing that is analogous to people having evolved language.

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THE CHILD'S DISCOVERY OF SPACE OR "I SAW IT ON TELEVISION"

by
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First intentions like first impressions need not be lasting. My initial aim was to conduct a specific study about children in the hopes of indicating in some way how television contributes to a child's discovery and ordering of space. However, television still requires more generalizing because it is a most pervasive, common and general medium. Despite the voluminous and specific studies about television we are still a long way from understanding it and presumably ourselves. So, I shall press on and run the risk that I am being too general to the point of being vacuous and therefore emulating the medium as opposed to analyzing its effects.

I intend to describe a part of what might best be labelled as the "telespace" and attempt to locate a child's place in it and because of it. I connect technological developments to philosophical and anthropological sources, all of which do not breathe a word about TV. And I describe some of my own seeing. As to this latter component I make no apologies for what might be regarded as self-indulgence. Increasingly, social science is recognizing that everyone has a place in the formulation of theory and in subsequent research and writing. So it goes with television. If we are to grasp it and understand it then we have to initially acknowledge what we do with it or else we readily permit the medium to be a Pandora's box.

Faced with the box and its contents, where does one begin? Well, with both. Watching television is immensely consumptive, much like eating. Television programs, like food, are subject to endless planning, selection and talk. The analogies and connections do not end here. Interactive communication systems such as Telidon refer to the first page of information called up on the screen as the "menu page." Significant too are the increasing number of screens--tables of information--be they conventional television consoles, computer screens or other video display terminals. Here, as I attempt to word process with terminal at hand I can not resist making another food reference. We shall have to rework a line from Joni Mitchell's late 1960's song Big Yellow Taxi. We shall substitute "Hey farmer, farmer put away your DDT now" with "Hey, computer programmer, put away your VDT now."

My hunch is that television in its various forms not only regulates our methods and types of consumption but the very atmosphere where all kinds of dining takes place. The tables of information cast in the form of screens divide and punctuate our lives by reconstituting our sense and use of space. I shall now draw upon three sources to suggest how space is given, influenced or modified by television.

Source one is Mechanization Takes Command (1948) by Siegfried Giedion, specifically the sections on "The Constituent Furniture of the 19th and 20th

Century." Television is a kind of furniture and through Giedion's work let us make some historical connections. The nineteenth century was marked by diversity; there were various kinds of rockers, sofas and chairs. The industrial revolution had taken effect and consumer goods were making their appearance for what was to be an increasing middle class. Mass travel was also having its beginnings and the business of designing and supplying comfort became central. Giedion, for example, spends considerable time tracing the development of railway furniture. More generally, he notes:

> Improvised and informal as in the medieval period, frontal as in the Renaissance, relaxed as in the eighteenth century--all these postures are found again, reappearing like the various styles, in the furniture of the nineteenth century. When the nineteenth century builds its heavy chairs of cylindrical cushions and spiral springs, it gives them the stiff upholstery and the formal aspect of seventeenth-century armchairs. It also used the curved and attenuated forms of the eighteenth century, and under Oriental influence went even further than did the medieval period in cultivating an informality of posture. (p. 396)

Giedion goes on to show how the posture of the nineteenth century was based on relaxation. This continued in the twentieth, but the diversity of furniture types and styles gave way to mass diffusion, and furniture emerged as a full-fledged consumer product. Furniture as craft and art was an exception being the concern of a decreasing number of cabinet makers, part of the grand conceptions of architects and designers such as Mies Van Der Rohe and Marcel Bruer or as particular objects to be collected and consigned to antiquity. The overall situation was this:

> America in this time of full mechanization looked away from living rooms and turned toward mechanization of the household. Now the rooms in which one dwelt, the things of one's surroundings, were for the most part left out of discussion. The kitchen, the bathroom, and labour-saving devices roused the imagination. And inventiveness, formerly embodied in patent furniture, flows into mechanization of the household, where America takes the unchallenged lead. (p. 510)

Giedion does not consider the role of the new communications media in this transformation. However, they are very significant as they maintain the cultural trappings and styles of furniture but are thoroughly mechanical in their operations. My father, for example, prizes his old circa 1930 Marconi radio for its great reception and durability. It also retains its shiny oak clothing and original dial.

To turn to television, the placement and purchase of "TV's" in the 1950's and 1960's especially was an important cultural process. Dens and "rec" rooms, those marvelous and horrible suburban creations, emerged to accommodate, among other things, the television. Yet TV is not confined to such "recs" in determining our usage and valuing of space. Wherever televisions are placed--on kitchen counters, bookcases, in bedrooms, bathrooms or living rooms-- they put a late twentieth century broadside on E. M. Forster's early twentieth century novel A Room With A View. Just as Giedion described changes in posture that resulted from furniture types and usage, we have to consider the very influence of television in the placement of our own bodies. At home, we may have become a nation of "liers" and sitters. At work, increased VDT usage will make old-fashioned typing and paper-pushing seem arduous but somehow vibrant and our recollections of such work nostalgic. To further emphasize how one's surroundings are molded by television let me now describe a childhood memory, which is perhaps nostalgia of another kind.

The time was 1958 and I was seeing television for the first time. A mine disaster was the news and constant reports about the tragedy were being made on television. I was lying in my grandmother's living room, the only light was the TV screen, and I was being told the death toll increase on the black and white "Motorola." For once, the somber and dark surroundings were consistent with the television content and I remember, even as a preadolescent, being shakened by the occurrence.

"In those days," people watched a lot of television in rooms where the TV provided the only light. Perhaps the medium seemed to possess magical qualities which gave it this singular status. Attendantly, of course, people were still bringing their experience of the movies to television. Two things were certain; we were being positioned and propositioned and in new and dramatic ways. Social interaction at home had become altered and our behaviour in public places was suddenly punctuated by: "Did you see that on television last night?"

My boyhood recollection leads me to my second source, The Poetics of Space (1969) by Gaston Bachelard. Like Giedion's book there is nothing in it about TV per se these are ultimately the best books about television. My experience of the mine disaster, nestled as it was in my grandmother's living room, constituted a kind of poetic. A mood was set, a certain resonance permeated and I felt a sense of enclosure as I lay close to the television. I was tied to a particular space and event. This experience was much like those which Bachelard says emit from our relationship to boxes, wardrobes, chests, corners, cellars, attics and houses. These are the objects which fill so much of our "empty" space, leaving other spaces between; these are the things that disclose and enclose our feelings. In one small way the experience of the mine disaster represented the cultivation of intimacy. Do we still have these experiences from and through television or was it because television in 1958 was comparatively new and I was newer to it?

A possible reply is to be found in my third source, The Hidden Dimension (1964) by Edward T. Hall, again not a book about television. Hall studies our use of space in public and private settings and suggests that there are four kinds of distance: 1) intimate, zero to eighteen inches; 2) personal, eighteen inches to four feet; 3) social, four feet to twelve feet; 4) public, twelve feet and beyond. We watch television within these realms of distance. As a young boy I faced the mine disaster within the intimate range, as an adolescent I often chose to watch television at a local tavern where the TV was well beyond four feet, perched as it was on a high stand bordered by beer coolers. Yet while the actual distance between viewer and medium may be measured, it does not account for the complete spatial effect of television.

As I watch from my bed in an average size bedroom it may be within public distance. But perhaps I am watching while also participating within intimate distance, i.e., watching with another person(s). Meanwhile, the television is presenting its own language of space: close-up shots, medium shots, long shots and the variations that ensue. I experience these shifts in distance from a position that is not always stationary. I can transfix myself for hours and/or I can get up, move around, return again and again to the kitchen, that other source of consumption and indigestion. This is unlike one's experience at a movie house or a night at the "theatre," for in these instances we choose to go outside, into the public realm. We share a film or a play close at hand, i.e., in intimate and social distance with people we do not necessarily know. Inside, in one's own telespace the experience is immediate and close-up but not necessarily intimate. It only seems that way as we touch the world with our hands as we consume the contents of the box.

Returning to my pre-adolescent experience, what has changed? What constitutes intimacy in 1982? In 1958 television was new and experimental, capable of generating intimate moments and spaces. Now, seeing has become institutionalized viewing and we attend to and depend on TV as opposed to seeing it. This might have always been given the inherent aspects of the television form, and the recollections could be a way of coping with an event that never "really" was, for me. Nevertheless, I think I have demonstrated how television has reworked and reconstituted our space. Let me now close (open?) by relating two observations about a child's place in the telespace.

First, a personal reference, out of my home, my living room. My son is two and a half. He enjoys positioning himself in corners, between furniture, behind doors. One can not make too much out of this because it is dishonest and unproductive as both parent and teacher to be always carrying a Piagetian primer and not informing your child that he or she is a subject. Yet I want to suggest that his negotiations with space are connected to his relations with television. He is not yet concerned with what is "on" but what television is, where it is. He likes to walk around it, touch it and constantly turn it off and on. He approaches the medium much like he explores a handbag or a suitcase. These experiences contribute to a gradual understanding of space and ultimately to the acceptance of television as a determinant of space. What emerges are the grounds for intimacy or more appropriately, the illusion of it.

Now I shall move the developmental ladder ahead by describing a setting increasingly common in schools and universities--the computer center with its rooms and rooms of terminals. Here, people sit within intimate range of the terminal as they program and process. As they sit, there is personal distance between them and their neighbour next door. Space is being reconstituted once again. Such terminal experiences are finding their way into the home, creating a new form of intimacy. Of course, television will not go away. It may change its clothing, receive a wider job description and will be a component of an enlarged telespace. Yet its familiarity will ensure that it is a constant source of consumption and isolation.

"If we are to grasp (TV) and understand it, then we have to initially acknowledge what we do with it or else we readily permit the medium to be a Pandora's box."

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VIDEO ENHANCED HUMAN RELATIONS TRAINING

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Video Enhanced Human Relations Training

Uses of video for human relations (or social skills) training follow one of three general formats: passive, active, or interactive. Passive formats rely on video to present information about appropriate behaviors, followed perhaps by group discussion or role playing. Interactive formats rely on some method of allowing the video viewer to interact with the screen images. That work is exemplified by Patrick Doyle in his "Simulated Interaction Training" scenarios, where clients actually talk with videotaped images, following a social skills training script. Active formats include videotaping the client and allowing the client to view herself/himself.

Too often, active formats simply videotape a group or individual therapy session, as in the case of therapist training, and the client or student therapist views the tape later in order to discover problem behaviors. That format has several disadvantages. One disadvantage is that it focuses on mistakes. Another is that there is no practice component built in. A third is that there is too much unedited information, resulting in confusion and inefficient use of time. The purpose of the present paper is to describe a model for human relations training that attempts to correct these disadvantages.

The model is based on theory and empirical evidence from four broad areas; modeling, self confrontation (self-as-model), behavioral rehearsal, and group discussion and interaction. Modeling refers to observational learning by watching another person. Self-confrontation refers to observational learning by watching oneself. Behavioral rehearsal refers to practicing, both overtly and in fantasy, specific desired behaviors. Group discussion and interaction simply means that the training is done in a small group, rather than individually. The model combines what I believe are the best-supported elements of the four areas from extensive review of literature on the acquisition of new behavior.

> *"The model is based on theory and empirical evidence from four broad areas: modeling, self confrontation (self-as-model), behavioral rehearsal, and group discussion and interaction."*

The Training Procedure

Modeling, self-confrontation, and behavior rehearsal have all been shown to enhance human relations training. In addition, the advantages of group training are well documented. The video enhanced group training procedure to be described in this section combines what we believe are the best-supported elements of modeling, self-confrontation, and behavior rehearsal. By using a group structure, we also add peer support, group problem solving, multiple models, a sense of universality, and group cohesion. The procedure includes overt and covert, as well as directed and improvised, rehearsal. This combination is potent.

The training procedure is diagrammed in the flow chart in Figure 1. It assumes that a small group of people with human relations concerns have been assembled, that some measure of rapport and cohesion have been established, and that the program has been outlined and explained to the group members. We recommend warm-up, cohesion building, and group starter exercises prior to implementing the procedure.

The procedure consists of nine steps, with a possibility that Steps 6, 7, 8, and 9 will be repeated at least once and perhaps several times. Each person in the group progresses through the steps with the support and assistance of the other group members. The steps are described below:

1. The first step is a general group discussion. The trainer leads off this discussion by asking each member to state a recent problem situation. The trainer can have each member speak in turn or can ask each member to contribute when he or she feels like it, as long as each person participates. This process begins a discussion of similarities and differences in situations among group members, and it is likely that members will automatically begin to offer each other advice on what might work, share supportive experiences, and/or state that they are stumped and do not know what to do next. A side benefit of Step 1 should be the creation of a greater sense of group cohesion that comes from openly sharing situations.

2. After discussion begins to wind down, or at a time deemed to be most appropriate by the trainer, Step 2 is initiated. This step involves the selection of a focal protagonist from the group. The trainer has three options at this point:

   a) Ask for a volunteer and leave it up to an individual group member to take the step from talk toward action;

   b) Ask the group as a whole to decide who should go first and the decision would then be by group vote or consensus; or

   c) Be attentive to the personal cues of each member, and personally make the selection choice. The trainer might choose the first protagonist on the basis of a perceived interest level or anxiety level that may be especially noticeable through eye contact, or through observing someone's posture, or by observing verbal cues indicating that a person is ready. The advantage of the

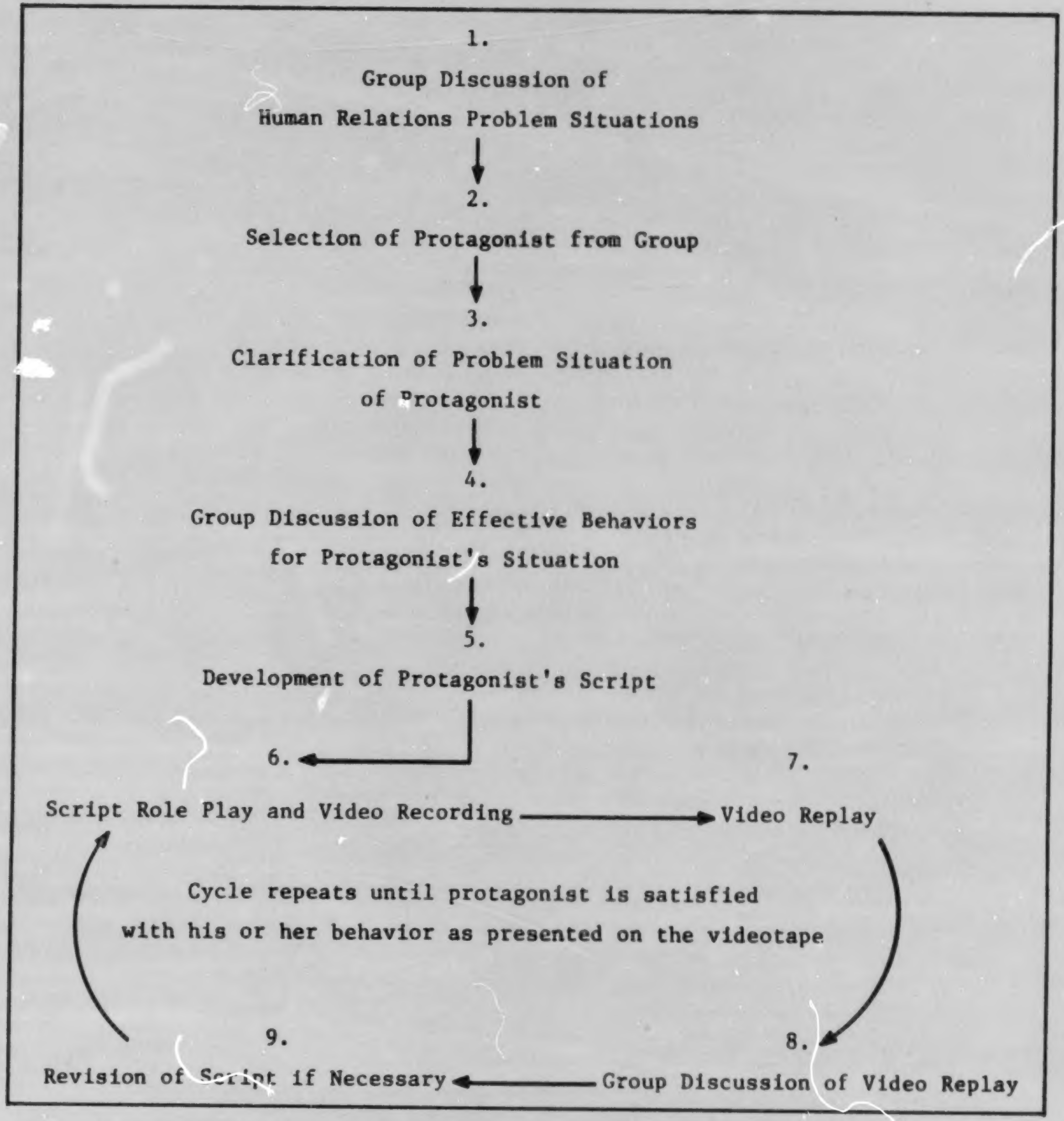
1.
Group Discussion of
Human Relations Problem Situations
2.
Selection of Protagonist from Group
3.
Clarification of Problem Situation
of Protagonist
4.
Group Discussion of Effective Behaviors
for Protagonist's Situation
5.
Development of Protagonist's Script
6.
Script Role Play and Video Recording
7.
Video Replay
Cycle repeats until protagonist is satisfied
with his or her behavior as presented on the videotape
8.
Group Discussion of Video Replay
9.
Revision of Script if Necessary

Figure 1. Flow chart of video enhanced human relations training.

trainer's making the selection may be that s/he could choose someone whose stated situation and personal style would lead to a productive first experience. If the trainer uses this method, care should be taken not to nag or coerce someone into participating prematurely.

3. The third step is to help the protagonist clarify the problem situation and to make it as specific as possible. Again this involves the entire group. The protagonist is asked to state the situation as clearly and

simply as possible. At this point, each group member is instructed to focus on trying to get a clear understanding of the situation. This evokes questions of clarification and specificity leading toward the narrowing of the protagonist's problem into a specific, manageable example that can be transformed into an action-oriented script.

4. Now that the protagonist and the specific situation have been chosen, the process of selecting some effective behaviors begins. The trainer might start by asking the protagonist to relax for a moment to think about the situation as it happened and then to imagine acting in the most effective way possible. The protagonist then shares this fantasy with the group and, again, members of the group respond with thoughts as to why the protagonist's covert modeling of the situation would or would not be most effective. Members also offer ideas and suggestions of additional approaches, providing new ideas for the protagonist to consider. Step 4 continues until the trainer, the group, and the protagonist are satisfied that the best behavioral possibilities have been explored.

5. It is now logically appropriate to develop and write an actual script for the protagonist. The protagonist writes at the top of the script sheet the specific problem in a brief, concise statement. Next the protagonist lists the names of the characters in the order in which they appear in the situation. Then with the trainer's help, the protagonist writes the script, being sure to write the other actors' lines as accurately as possible and being equally sure to write his or her own responses and statements in such a way as to reflect the new, ideal, effective behaviors as closely as possible. Once the script is devised, the protagonist reads it aloud to the group to get their comments and approval.

6. With the script in its final form, the protagonist then asks those members of the group who most closely resemble the characters in the script to help act it out. The actors learn their lines, get a clear image of the nonverbal cues of the characters they are portraying, and, together with the protagonist, go through a dry run or two before videotape recording an actual dramatization. When the protagonist and actors feel ready, they act out the script and have the proceeding videotaped with full sound.

7. The next step is simple. The tape is rewound and played back for the participants and group members to watch and make comments. It is important here that the trainer help members focus on watching nonverbal behavioral cues as well as listening to verbal content. The video can be stopped at any place so certain behaviors or sequences can be highlighted through repeated playback, or it can be run straight through, holding all discussion for the end.

8. The group is then asked to respond to the video reproduction of the scripted situation. The protagonist is asked to share feelings about having performed the "most effective" behaviors, other actors may speak about how they felt in the roles they played, and members who watched may offer critiques and/or share experiences and feelings

from their own lives that might be appropriate and useful. The focus of discussion here would be on whether or not the videotaped rehearsal and playback did in fact represent the ideal behaviors called for in the script. If they did not, the reasons should be explored and the behaviors needed for improvement should be identified in order to bring the behavioral rehearsal as close as possible to the ideal behaviors indicated by the script.

9. A final step, if necessary, would be intertwined with, or follow from, Step 8. In the event that the discussion in Step 8 uncovered weaknesses in the script or produced new ideas about behaviors that might be more effective than those written into the script, the final stage in this process would be revision of the script to make it as effective as possible. Then Steps 6 through 9 should be repeated over and over until the new effective behaviors are learned and the protagonist satisfied.

The trainer and the group then would begin the entire process all over again at Step 2 with a new protagonist. The first protagonist would participate with other members' situations and continue to learn from observing and/or participating in other people's enactments. The group process continues with all members' participation until each member has played the role of the protagonist. In order to accomplish this goal, an entire session of one and one-half to two hours will probably need to be scheduled for each group participant. A group containing five to eight members seems to be the ideal size for this procedure resulting in a group program of seven to ten sessions, including orientation and summary sessions. Protagonists who have enacted their problem situations are encouraged to try out the new behaviors between sessions and to report back to the group.

Applications and Videotaped Illustrations

A procedure has been developed that is responsive to the needs of individuals and adaptable to most training needs. In order to illustrate its versatility, three applications will be described: parenting skills training, assertiveness training, and training of trainers and therapists.

Parenting Skills Training

In 1981, Rod Stewart, Bob Stacker, Steve Schneider and the author applied the procedure to teaching parenting skills to parents of difficult teenagers. The basic idea was to elicit from a group of parents actual situations they had encountered with their children in which they felt that they had not been maximally effective. Following the procedure, a protagonist was selected, the incident was stated and clarified, and the group offered suggestions for more productive handling of the event. A script was written, the scenario was enacted, and the protagonist and the group of other parents discussed and tried to improve upon the enactment, as portrayed on the video. The actual children were not present--their parts were played by other parents and the trainers.

The parents found the procedure to be enlightening and helpful in developing more effective ways to relate to their own children. The trainers were impressed with the rapidity with which the parents learned new skills.

Assertiveness Training

The videotaped example shown to IVLA conference participants is from an assertiveness training program carried out in 1981 by Steve Schneider and the author. Assertiveness training is particularly appropriate for this training model because it is well documented that many unassertive people know how to be assertive but simply cannot or will not act assertively. Therefore it is a small step from discussion to ideal script development. Secondly, it is easy for most people to pinpoint events in which they wish they had acted more assertively. Finally, beginning with a written script and allowing for improvisation meets the needs of most people who are learning to become more assertive.

Training of Trainers and Therapists

Peter Bishop and the author have applied the procedure to the training of students in a therapy practicum. Each student identified a particular issue faced with clients. The steps in the procedure were then followed as student therapists practiced ideal therapeutic interventions. The clients' roles are played by other students, and the students learn from each other.

An interesting variation of this model is to work with student teams of two people each. Each student takes turns being the protagonist as he or she works on a variety of client-related therapy strategies. If the two students have acted as a team during the practicum, then they are familiar with each other's clients and can play those roles realistically.

Summary

A human relations training paradigm has been presented in which video recording and playback are an integral part. Often, video usage is adjunctive to group processes and training programs and not integrated into the procedures as part of the training model. Because video can play an important role in self-modeling and behavioral rehearsal, it becomes central to any theoretical model that incorporates those concepts. Video has enormous potential in human relations training and adjunctive uses do not allow trainers to take full advantage of the potential.

It is important for trainers to incorporate any training tool--video, photograpy, questionnaires, or whatever--into a coherent theoretical framework. We have tried to provide a framework of a model that we hope others can use productively. The active video format described can be tailored to individual participants' needs and is, at the same time, general enough to be applied to almost any group training process.

OPEN LEARNING INSTITUTE TELIDON PROJECT

by

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The Open Learning Institute (OLI) was established by the Government of British Columbia in June 1978. Through OLI, students can take courses leading to high school completion diplomas, to certificates in career, technical and vocational areas, and to a first degree in arts and science. All of the courses developed at the Institute are designed for distance education, without the support of face-to-face instruction. Typically, a course consists of several printed units or modules, textbooks, anthologies and mail-in assignments. On occasion, printed course materials are supplemented by audio tapes, filmstrips, lab kits, television programming, etc. Each student is assigned a telephone tutor who provides individual instruction.

"Telidon is a videotex system that incorporates the most recent developments in computer graphics and telecommunications technologies."

Telidon is a videotex system that incorporates the most recent developments in computer graphics and telecommunications technologies. It converts a basic television set into a powerful information tool. Using a television set to which is attached a keyboard or calculator-like keypad, Telidon allows a viewer to call up information from a computerized data base via a telecommunications link such as telephone or cable lines. The viewer requests information in the data base by simply pushing buttons on the keypad. The pages of information make use of both text and graphics, a variety of colors and limited animation.

BC Telephone Company conducted a non-residential Telidon field trial from November, 1981 through July, 1982. It was designed to determine the application of Telidon technology in the areas of business, government, and education, and to conduct market research into the use of Telidon.

Purpose

The Open Learning Institute participated in the BC Tel field trials of Telidon for the purpose of examining the factors involved in converting printed and audio educational materials (and general information about the Open Learning Institute) to a Telidon format. The Institute's aim in studying these factors was twofold: (1) to determine the advantages and limitations of adapting educational materials for the Telidon system, and (2) to gather information about the feasibility of Telidon instruction for distance learning.

Design and Development of Instructional Materials

The source of instructional materials for the Telidon project was Open Learning Institute courses produced over the past few years. The aim was not to create new materials especially for the Telidon medium, but to adapt existing instructional materials.

Before deciding on content or designing our first page, time was spent in reviewing existing pages on Telidon information systems, and in familiarizing ourselves with the page creation terminal, also called the information provider system (IPS). The possibilities and limitations of page creation emerged very clearly from this review and orientation.

Telidon pages are created using a keyboard and graphics tablet (part of the IPS). They are assembled using seven basic building blocks together with a large range of attributes. The basic building blocks (known as graphic elements) are dots, lines, rectangles, arcs, circles, and polygons as well as text. The attributes comprise fourteen colors (including six shades of grey), nine fill patterns, four line textures, and eight sizes of text. Pages are created by combining, overlapping, and modifying the graphic elements, and choosing suitable attributes for each element. The page creation system includes an editing capability.

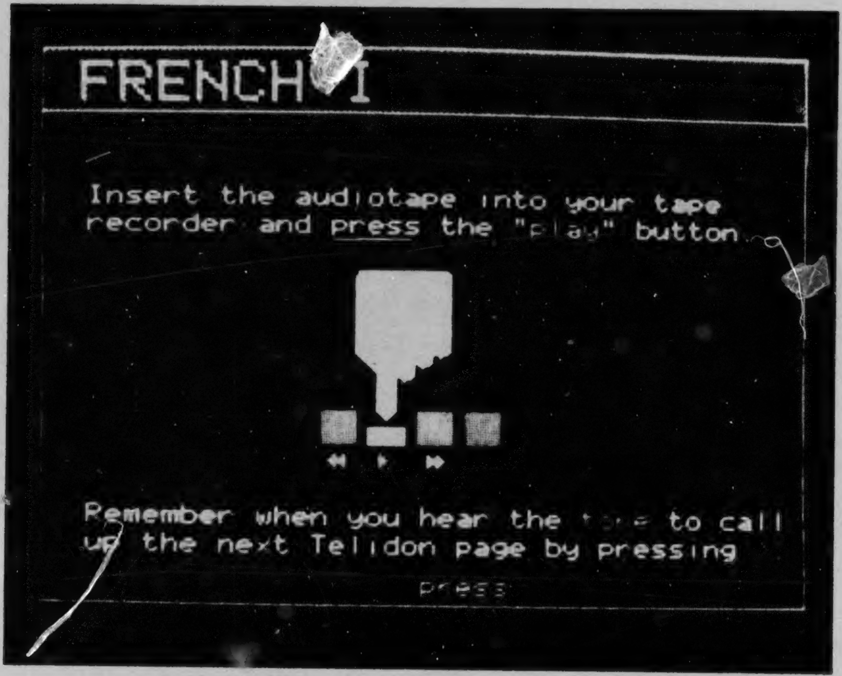
Pages are always "redrawn" when they are displayed, that is, graphic elements appear in the order in which they are created. This is an important fact to be taken into consideration when designing and creating pages. A critical constraint is the time required for page formation. Review of many pages for several Telidon information systems persuaded us to avoid complex visuals in the interest of keeping page formation time to a minimum.

In our development of Telidon page materials, we found that another important limitation is the restricted amount of text that can be accommodated on one Telidon page. The screen will accommodate only 40 characters on a line, and there are only 20 lines. (See Figure I). Whatever the message, it must be short and uncluttered. This necessitates substantial editing of instructional material to transform it to a series of complete and discrete ideas appropriate to the Telidon page format. It also restricts the choice of material that can be provided by Telidon.

Other needs that became apparent as a result of our experience included a stronger editing capability for complex pages, a more powerful computerized instructional support system, in particular a fast response option (for page formation) and portability of IPS hardware.

Design of Instructional Materials

The instructional materials that were translated to the Telidon medium included three content areas: Introductory French, Industrial Mathematics, and Electrical Utility Operations. These course materials were representative of the broad range of Open Learning Institute courses.



FRENCH I

Insert the audiotape into your tape recorder and press the "play" button.

Remember when you hear the tone to call up the next Telidon page by pressing

press

Figure 1. Feedback provided by audiotape.

French. The sample materials in introductory French gave instruction on the names of the rooms of a house. The first sequence presented the names aurally, by means of an audio tape that was integrated with the sequence of visual representations of the rooms on Telidon. Participants were given the opportunity to practice correct pronunciation by identifying the room names and were given feedback (by audio tape) to check whether or not their pronunciations were correct.

The second sequence presented the written names, and allowed the participant to practice identification of the rooms in writing. Feedback was provided for each question on the subsequent Telidon page. Participants were allowed to repeat each of the sequences as often as they wished.

Industrial Mathematics. The sample materials from Industrial Mathematics explained how to determine the areas of complex shapes. Prerequisite for this instructional sequence was the ability to determine the areas of a square, rectangle, triangle, circle and segments of a circle. A reference sheet giving the formulas for these areas was provided to the participants for their use in working out the problems.

The instructional material made use of the animation capabilities of Telidon: dynamic images reduced complex shapes into component parts. The instruction included several examples with step-by-step solutions, and an opportunity for participants to complete steps in the solutions before advancing to the Telidon pages with the answers. Participants were allowed to repeat the sequence as often as they wished. Similar problems that participants were asked to solve independently were presented in a self-test; they were able to assess their work by means of solutions provided in a solution key following the self-test.

Electrical Utility Operations. Sample instructional materials from Electrical Utility Operations described the nature of energy and provided an overview of the major components and general operation of an electrical utility system. Dynamic visuals were used to provide step-by-step instruction. The material was divided into four short sequences, each with a self-test which allowed participants to assess their own learning. They were allowed to repeat each of the sequences as many times as they wished.

The approximate number of pages created for each of these courses was:

French I	56 pages
Industrial Mathematics	37 pages
Electrical Utility Operations	215 pages

The times required for development of these instructional pages were as follows:

Page design	10 days
Page creation (using IPS)	12 days
Review and editing	10 days
Flowcharting and page sequencing	2 days
Loading pages into the Telidon data base	4 days

Evaluation

Because of the limited time and financial resources, the project was carried out on a small pilot basis, with a relatively simple evaluation study. A sample of 24 persons of varying backgrounds was randomly assigned to the three content areas. Once the participants were familiar with Telidon and how to use it, they were left to work through the assigned instructional materials on their own (Figure 2). They were then assessed with respect to how much they had learned and their opinions and perceptions regarding Telidon.

Results

Performance

The results from the achievement tests indicated that the instruction provided by the Telidon medium was effective (See Table 1). Mastery of the French content and of the Electrical Utility Operations was achieved (95 per cent overall for each). Scores on the mathematics achievement tests were somewhat lower (80 per cent mean). It is difficult to assess whether the high achievement levels may have been due in part to the knowledge brought to

Figure 2. Participant in evaluation working at Telidon terminal.

the session. Because of the added burden it would have imposed on the participants, pretesting of their content knowledge was decided against.

Table 1

Achievement Scores

	French (N = 8)			Math (N = 6)	Electrical Utility Operations	
	Oral	Written	Combined		2 parts (N = 9)	4 parts (N = 6)
M (%)	94.64	95.31	95.00	80.36	92.06	95.00

Participants were allowed the opportunity to review an instructional sequence as many times as they wished. When asked whether they had reviewed a sequence more than once, 38 per cent reported they had.

In addition, three of the self-tests in the Electrical Utility Operations material required participants to repeat a question if they selected an incorrect response. Eighty-nine per cent of these participants reported having to repeat at least one question. This points out one of the advantages of individualized instruction having a self-check mechanism.

Participants

Participants were quite positive about their experiences. For example, confidence levels increased (from a mean of 3.33 to 4.04 on a 5-point scale). Participants' interests in the three content areas increased as a result of the experiment (See Table 2). Interest in French was initially high and increased to a very high level as a result of participants' experiences. Interest levels in mathematics were the lowest of the three, but did increase over the course of the study. Participants' interests in Electrical Utility Operations were positive overall.

Table 2

Change in Interest in Content Area

Content	Presession	Postsession
French I Mean* (N = 8)	3.38	4.63
Industrial Mathematics Mean* (N=7)	3.00	3.14
Electrical Utility Operations Mean* (N = 9)	3.33	3.50

* (measured on a five-point scale of not at all interested to very interested)

The participants' judgments of the overall performance of the Telidon system were positive. When asked to rate Telidon as a source of obtaining similar types of instruction, they responded favorably (See Table 3).

Picture quality, text quality, and directions were rated quite positively. However, speed of page formation received a lower rating, close to neutral, which indicates this as an area that could bear improvement.

Comments contributed by the participants in the study were numerous and varying. They concerned both software and hardware. The following summary of comments represents common observations and concerns of the participants in all three subject areas.

Table 3

Rating of Telidon
(N = 24)

General	Mean*
1. Overall performance	3.86
2. Telidon as a source of instruction	3.71
Specific	
1. Picture quality	4.17
2. Text quality	3.67
3. Directions	3.88
4. Speed of page formation	3.17

* (measured on a five-point scale of not at all good to very good)

Several participants judged Telidon as an effective teaching method, particularly for the French. They liked being able to work independently and at their own pace. In addition, they found Telidon entertaining and had fun learning from it.

On the negative side, the speed of graphics formation was judged by many to be too slow, and the resolution of graphics and text not good enough. Problems were experienced with certain aspects of the hardware, particularly the Telidon keypad with its small, closely spaced buttons. A negative effect on Telidon's potential for instruction is that the system discourages non-linear progression through the instructional information; several criticized the lack of easy review capabilities. In addition, it is difficult to get an overview or contextual framework for information presented.

Conclusions

From the point of view of the Open Learning Institute, the two stated purposes of the Telidon project were met. Three extremely different types of instructional materials were adapted to the Telidon medium. The study was very successful in that it answered many questions regarding this new technology.

The results of the evaluation show that most people met the stated instructional objectives in all three content areas, indicating that the instruction provided by the Telidon medium was effective. In addition, participants were quite positive about their experiences.

The study demonstrated the advantages and limitations of using Telidon for instruction. Advantages of the medium relate to the graphics capabilities and the independent, self-paced nature of instruction the system can offer.

Constraints were imposed by the slow speed of graphics formation, by the need for greater ease in reviewing materials, and by technical aspects of the hardware, particularly of the Telidon keypad.

The major limitation of Telidon is the restricted amount of text that can be accommodated on one Telidon page. This necessitates substantial editing of instructional material to transform it to a Telidon page format. It also restricts the choice of material that can be provided by Telidon.

Whether course material is provided in whole or in part by the Telidon medium, the technology has proved to have potential for distance education. Telidon can become an integral part of distance instruction.

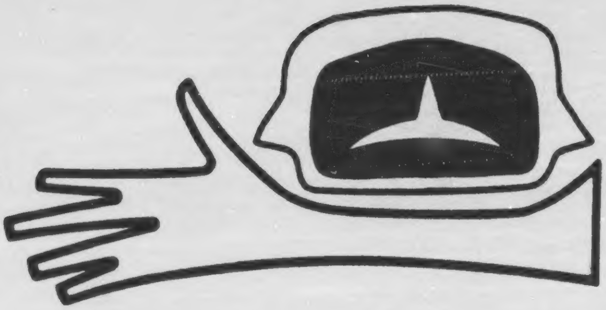
Implications For Further Study

Further study is needed to investigate issues of particular relevance to distance instruction. In view of the success of combining Telidon and audio in our experiment, there is a need to study the linking of Telidon with other media. It would be interesting to explore and assess the combination of the Telidon medium with teleconferencing as is presently being studied by Athabasca University in Alberta.

> *". . . there is a great need to explore the merging of Telidon with more powerful computer systems which would allow more sophisticated instructional design."*

Most importantly, there is a great need to explore the merging of Telidon with more powerful computer systems which would allow more sophisticated instructional design. The combination of Telidon and the microcomputer is another important project to explore. This type of work is already being carried out by David Godfrey at the University of Victoria.

This pilot study was limited in scope. The positive results support conducting a field test which would involve learners studying a whole course in which Telidon is an integral part of the total instruction. By examining application of Telidon to a larger scale project, the potential of this new technology for distance education can be further explored.



VISUALIZATION IN EDUCATION

The topic of visualization in education is addressed by several authors at varying levels ranging from the visual exploration of a multi-cultural kindergarten described by DeCocker and Williams, to the curricular suggestions of Cahill and Cherrington for using visual material to help elementary school children express what they feel, to a university course in visual literacy taught by Sutton, and the concept of public distance education for adults presented by Kaufman. As one example of the continuing development of skills in visual thinking and communication, Hardin discusses uses of diagramming by learners from the elementary grades through graduate school.

The close integration between art education and visual literacy is brought out by both Nuell and Rice-Jones, while McKeown, Sinatra, and the team of Gnizak and Girshman present ways of using visual techniques in teaching writing skills.

Bullard directs attention to the special area of programs for educating hearing impaired children, and Nath discusses literal, inferential, and associational uses of photography in working with the trainable mentally handicapped.

Curriculum needs are emphasized by Oudejans and Tilroe with a proposal for a television-based educational package focusing on the exploration of human perception. The section concludes with a complete unit supplied by TVOntario on Curriculum Applications of Critical Viewing Skills.

DESIGNING VISUALS IN SELF-INSTRUCTIONAL MATERIAL

by

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Establishment of the Open Learning Institute

The Open Learning Institute (OLI) is a relatively new public distance education institution. Established by the British Columbia Provincial Government in June, 1978, the Institute was provided with a broad and challenging mandate which is described by the following statement of mission:

The Open Learning Institute, being a Provincial institute, shall perform the following functions:

1. a) provide programs of study leading to a first degree in Arts and Science;

   b) provide programs of study in career, technical and vocational areas and;

   c) provide programs of study in adult basic education.

2. The Institute shall manage needed support services, develop and acquire courses, programs of study and learning materials and distribute them by distance education methods.

Many definitions have been given for the term "distance education." For the purpose of this paper, we will use the term to mean an educational process in which a significant proportion of the teaching is conducted by someone removed in space and/or time from the learner. The Institute is to provide these services to geographically or socially isolated adults across the province, as well as to others who are in need of its services.

It should be pointed out that the Institute was created in a context of distance education projects existing throughout the world. Numerous projects had been successfully launched and many institutions presently exist which use predominantly distance education methods. In Canada, we can point to Athabasca University (Alberta), the Télé-Université (Quebec), North Island College (British Columbia) and the University of Waterloo Correspondence Division (Ontario). Elsewhere, the best known example is The Open University in Britain. Other notable examples exist such as Everyman's University in Israel and the University of Mid-America in the United States.

Table 1

Current Status of the Institute (Sept., 1982)

Enrollments	- Fiscal 1979-80 - 3,150 enrollments - Fiscal 1980-81 - 7,500 enrollments - Fiscal 1981-82 - 10,500 enrollments - Fiscal 1982-83 - 12,450 enrollments (predicted)
Students	- Most are between ages 25-40. Two-thirds are women. Two-thirds from non-metropolitan regions.
Courses Available (Most developed in-house)	- September 1979 - 7 courses - September 1980 - 52 courses - September 1981 - 85 courses - September 1982 - 88 courses
Programs	- Adult Basic Education: Grade X completion; Grade XII completion. - Career/Technical/Vocational: Nine certificate programs: - General - Construction Management - Industrial Supervision - Motel Management - Office Assistant - Office Management - Secretarial - Electronics - Restaurant Management - University: Bachelor's Degree: Eight Academic concentrations: - Economics - History - Psychology - English - Administration - Sociology - Geography - Mathematics - Biology
Student Support Services	- Seven Advising Centres: Kelowna, Prince George, Richmond, Victoria, Terrace, Nelson and Kamloops - Tutors for each course. Mail and Toll-Free telephone contact - Library "Hot Line"
Staff	- Approximately 116 regular full-time employees and 10 temporary employees (In-house) - Approximately 83 Tutors

Current Status of the Institute

Table 1 provides a summary of the current status of the Open Learning Institute as of September, 1982. It is clear from the data supplied that the Institute has undergone an extremely rapid growth since its inception.

Structure of an OLI Course

Figure 1 illustrates the basic structure of an OLI course. It is unlikely that all components will be present in any particular course. Many OLI courses stand alone. This means that the OLI produced student learning package contains all of the necessary material for the course. The learning units themselves serve as the textbook. However, the majority of OLI courses are "wrap-around" courses, as shown in Figure 1, and require a textbook.

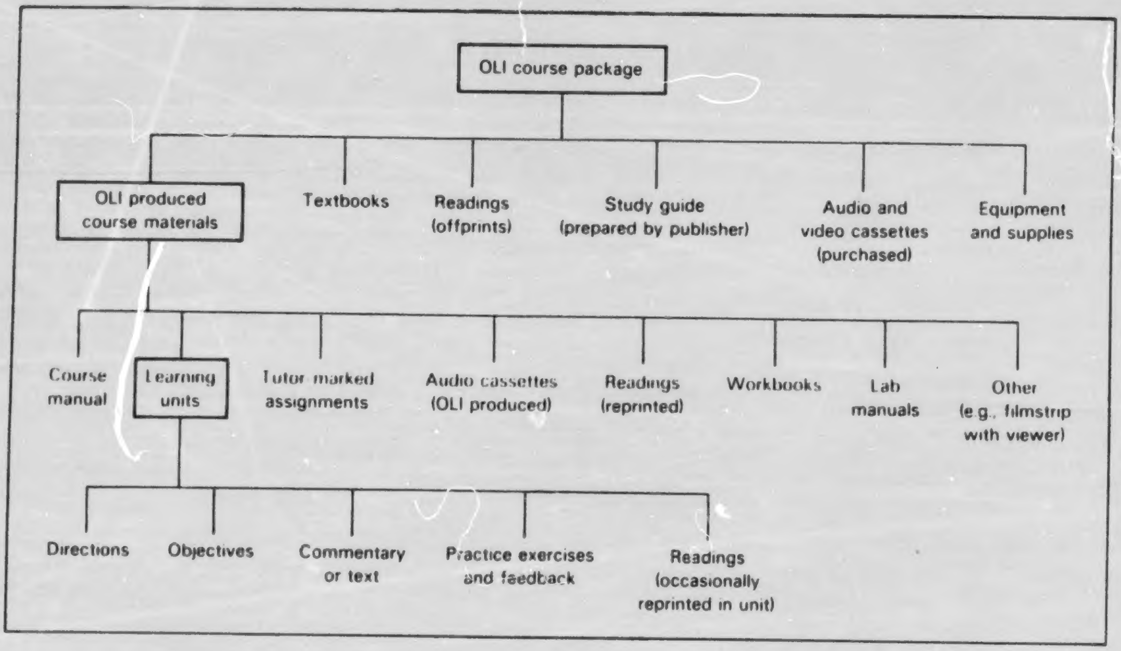

OLI course package
OLI produced course materials
Textbooks
Readings (offprints)
Study guide (prepared by publisher)
Audio and video cassettes (purchased)
Equipment and supplies
Course manual
Learning units
Tutor marked assignments
Audio cassettes (OLI produced)
Readings (reprinted)
Workbooks
Lab manuals
Other (e.g., filmstrip with viewer)
Directions
Objectives
Commentary or text
Practice exercises and feedback
Readings (occasionally reprinted in unit)

Figure 1. Structure of an OLI course.

Course Development Process

Course development at OLI is based on a course team approach. Each member of the team performs a particular function but often contributes ideas and expertise in several areas. This leads to carefully designed, developed and produced course materials which have been thoroughly examined by several individuals. Figure 2 illustrates the course development process in a general way. The main functions of the course team members are given below.

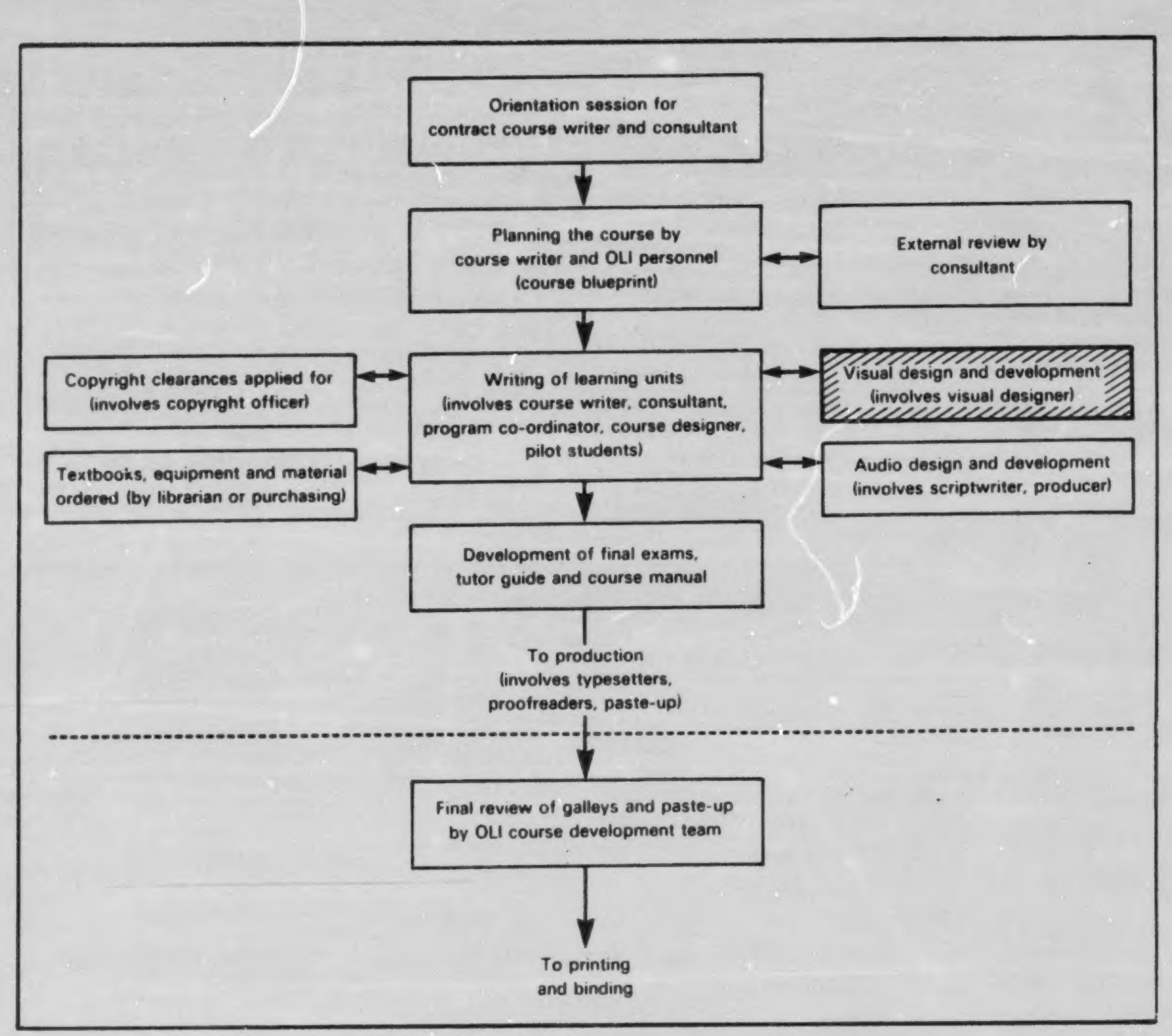

Orientation session for contract course writer and consultant
Planning the course by course writer and OLI personnel (course blueprint)
External review by consultant
Copyright clearances applied for (involves copyright officer)
Writing of learning units (involves course writer, consultant, program co-ordinator, course designer, pilot students)
Visual design and development (involves visual designer)
Textbooks, equipment and material ordered (by librarian or purchasing)
Audio design and development (involves scriptwriter, producer)
Development of final exams, tutor guide and course manual
To production (involves typesetters, proofreaders, paste-up)
Final review of galleys and paste-up by OLI course development team
To printing and binding

Figure 2. OLI course development process.

Course Team Member	Main Function
Course Writer	- Prepares course material
Consultant	- Ensures academic acceptability and transferability outside of OLI
Program Co-ordinator	- Ensures internal academic acceptability of material and coordinates development of the course at OLI
Visual Designer	- Does design and development of visuals for course
Copyright Officer	- Advises course team members about Copyright and applies for Copyright clearances

Pilot Students (when available)	- Work through drafts of material in developmental stage
Scriptwriter and Producer	- Work on preparation of audio script for studio recording

Visual Design at the Institute

The visual design process at the Institute can be thought of as having two parts: page design and visual support of text material. This presentation deals with the visual support aspect of visual design. However, a few words are in order about the process of page design.

Page Design

Page design refers to the particular configuration of text and visuals placed on the page. It includes decisions about typesize and typefont, number of columns used and the width and depth of these columns, as well as size and placement of visuals. The outside and inside covers, copyright and acknowledgments page, and contents page also require their own particular specifications.

During the past two years, time and machine limitations have led to a relatively simple and limited set of page designs. University courses use a Times Roman typefont in 10 point while the Adult Basic Education and Career/Technical/Vocational areas use Univers type in 12 point. All three program areas make use of a predetermined set of heading sizes. A single column, justified page layout is employed with large margins to accommodate visuals, labels or to allow students to make notes.

Visual Support of Text

Role of Visuals

The role that visuals play in course materials is a crucial issue for course designers and visual designers. Unfortunately, specific prescriptions for the effective use and design of visuals are scarce due to the complex and limitless relationships among varying picture types, subjects, presentation formats, and learner characteristics.

More recently, Broudy (1981) noted that his examination of related literature revealed that there have been few attempts to examine closely the relationship between pictures and learning from instructional texts. Nesbit's (1981) view is that the increased use of illustrations in educational materials is more often based on common sense guidelines and artistic notions than on experimental evidence. Duchastel (1980) concluded that research has had relatively little impact in the practical area of text illustration. He did argue, however, that research has been useful in specific areas such as supporting the value of illustrations in assisting learning (in a number of studies), showing that there may be some danger in the improper use of illustrations. He also argued that the value of illustrations for motivational purposes must be accepted on intuitive grounds--and not unreasonably so. This particular view has been prevalent at the Open Learning Institute during these early years of course development. The assumption has been made that visuals are inherently useful for instructional as well as motivational purposes.

Visual Design Process

At the present time, the visual design process is primarily concerned with the design and development of visuals to support text material. This process consists of two stages: design and development.

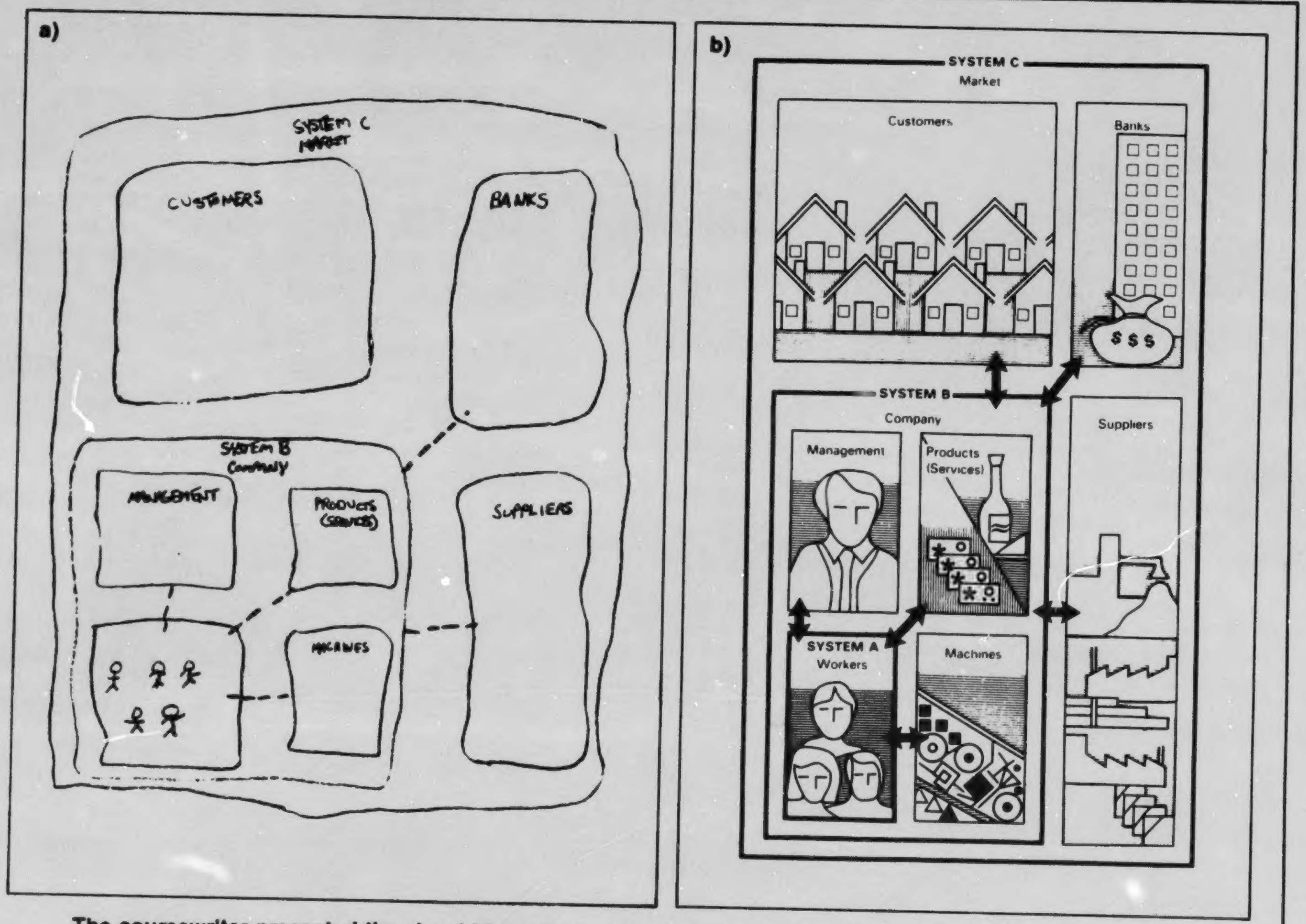
The prime responsibility for managing the visual design process rests with the course designer. The responsibility for contributing the creative design rests, of course, with the visual designer. The purpose of the design stage is to decide on the nature and placement of visuals in a particular course component (usually a course unit). This stage usually involves the generating of ideas from several members of the course team. The development stage then involves illustration, photography, or the acquisition of visuals that were decided upon in the design stage.

The visual design process is implemented quite differently depending on the nature of the course team and the particular material being developed. In technical courses such as electronics, the coursewriter as subject matter specialist prepares the rough initial visual. In arts courses such as English or psychology, the visual designer may begin with a rough "thumbnail" sketch or key idea from the manuscript which is presented to the course team for approval. Sometimes the course designer or writer will present ideas for the visual designer to prepare for discussion by the course team.

Regardless of the route taken by the course team to generate visuals, each approach results in camera-ready work that has passed through the necessary approval stages to ensure that each course is instructionally sound as well as visually pleasing. This flexibility has proven to be successful thus far in maintaining the tenuous balance between creativity and productivity. Figures 3 and 4 illustrate two approaches used by visual designers in working from an idea to a finished drawing.

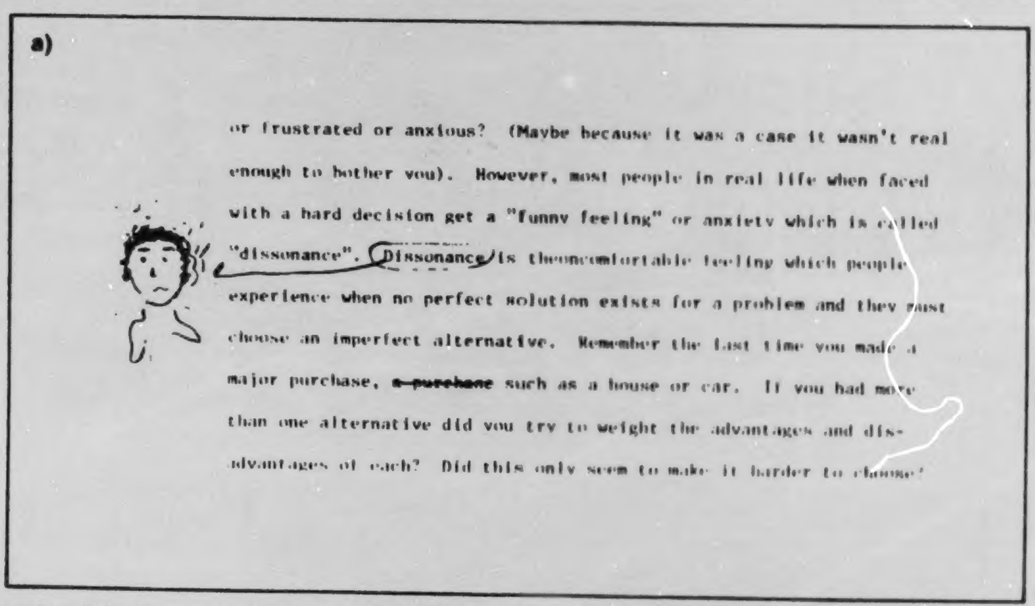
It should be noted that there is a wealth of material available through the use of copyrighted visuals. However, when using copyrighted visuals, one must definitely plan well ahead as time is needed to find the correct source or owner of the material and then to process the request for use.

> *"Visual design in a distance education institution or department is often an unappreciated aspect of the operation since distance education courses have traditionally comprised typewritten notes with scarce and simple illustrations."*


a)
SYSTEM C
MARKET
CUSTOMERS
BANKS
SYSTEM B
COMPANY
MANAGEMENT
PRODUCTS
(SERVICES)
MACHINES
SUPPLIERS
b)
SYSTEM C
Market
Customers
Banks
$ $ $
SYSTEM B
Company
Management
Products
(Services)
SYSTEM A
Workers
Machines
Suppliers

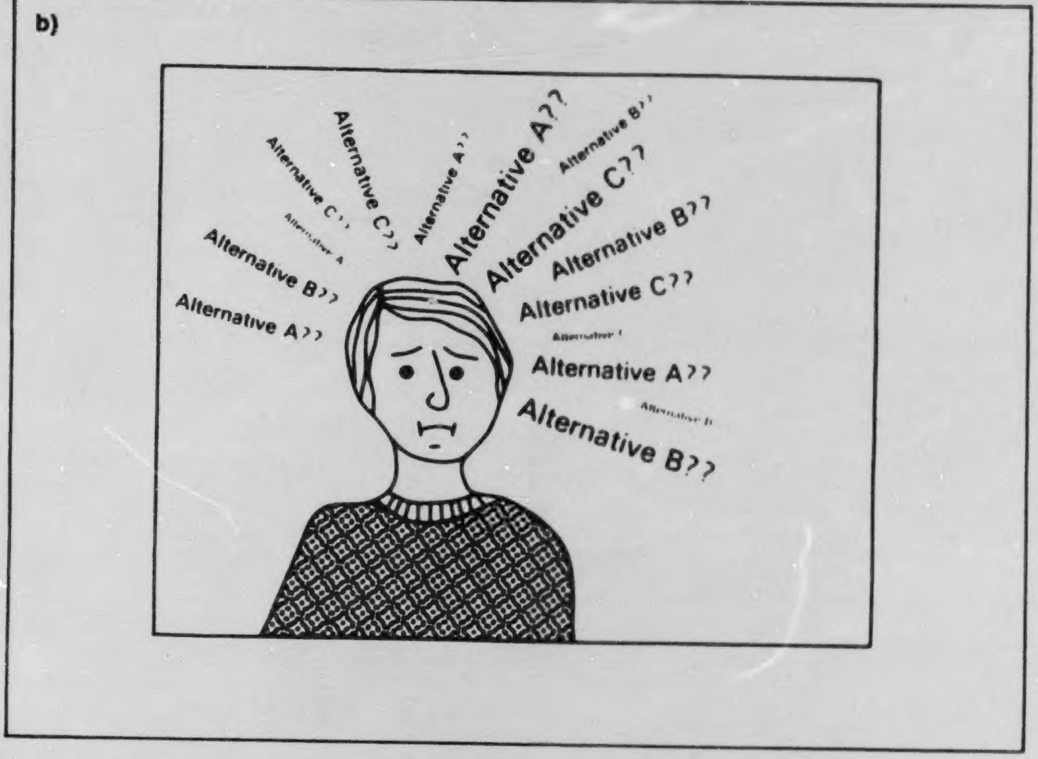
The coursewriter presented the visual idea with the drawing of the concept of systems shown in Figure 3a. The designer then "worked-up" the coursewriter's idea, Figure 3b.

Figure 3. The concept of systems from a business management course.



or frustrated or anxious? (Maybe because it was a case it wasn't real enough to bother you). However, most people in real life when faced with a hard decision get a "funny feeling" or anxiety which is called "dissonance". Dissonance is theuncomfortable feeling which people experience when no perfect solution exists for a problem and they must choose an imperfect alternative. Remember the last time you made a major purchase, ~~a purchase~~ such as a house or car. If you had more than one alternative did you try to weight the advantages and disadvantages of each? Did this only seem to make it harder to choose?

The visual designer read the coursewriter's manuscript and conceptualized a visual (Figure 4a) which later appeared in finished form in the learning unit as shown in Figure 4b.


b)
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Alternative B??
Alternative C??
Alternative A??
Alternative B??

Figure 4. An illustration of dissonance from a business management course.

Classification of Visuals

There have been several attempts at establishing frameworks for classifying visuals. Knowlton (1966) provided a lead in this regard by classifying visuals as either realistic, analogical, or logical. Twyman (1979) more recently proposed a scheme that consists of a matrix with one dimension describing the methods of configuration of graphic language and the other dimension describing modes of symbolization. Duchastel (1980a) pointed out that there has been little enthusiasm for these classification schemes, perhaps because of difficulties of basing taxonomies on the physical attributes of visuals rather than their communicative intent. He suggested that it would be more useful to use a functional approach to classifying visuals. This approach is primarily concerned with the function of a visual, while the appearance of a visual is of secondary concern. In his functional scheme, illustrations are considered as having attentional, explicative, and/or retentional roles. Duchastel more recently (1981) reported on a study from which he concluded that illustrations can influence retention even when they have no influence on immediate recall. He called for pertinent theoretical elaboration and empirical studies in this area. Levin (1979) also developed a functional approach to research on visuals, and his scheme identifies eight different functions that visuals play in text.

MacDonald-Ross (1977), in an important review paper, has explained that the knowledge we have about the use of graphic devices is derived from two sources: the expert practitioner and the formal scientific study. These are two quite separate traditions, and yet it is necessary to bring them together for their mutual benefit. He has argued that despite his skeptical outlook about the research tradition, there is, in fact, a surprising stock of knowledge available, and he has listed some of the more important sources in his paper. More concrete guidelines are available for effective visuals in scientific and technical subjects, and particularly in representing quantitative information. Wright (1977) has provided some useful guidance in these areas. Because these areas are better developed, guidelines provided by Wright and others have been particularly helpful in designing visuals for the technical and scientific courses developed at the Institute.

The present paper draws upon the work of MacDonald-Ross (1977) who suggested a set of purposes that he thought could be used to develop a more sophisticated classification. His categories of purpose are: iconic, data display, explanatory, and operational. These categories form the basis of the scheme suggested in the present paper and are defined following Figure 5.

These classification schemes are useful in guiding research in this area. However, they are also useful in indicating to the course team the various possibilities available through the visual medium.

In order to examine the various types of visuals used in OLI course material, they have been classified according to their purpose and mode.

			MODE	
			Illustrations	**Photographs**
PURPOSE	**Instructional**	Iconic		
		Data display		
		Explanatory		
		Operational		
	Motivational			
	Directional			

Figure 5. Scheme for classifying visuals.

The terms used in Figure 5 are defined as follows:

PURPOSE

Instructional	- To assist learning by providing information in a visual manner or by clarifying the text material.
Iconic	- To show what an object looks like, and to identify and label key parts.
Data Display	- To display the results of empirical observations.
Explanatory	- To show the logical relationships between key ideas.
Operational	- To help the reader to perform some well-specified task. Some diagrams have a single purpose, but others combine two or more, e.g. mathematical diagrams can be both explanatory and operational (algorithms); biological diagrams can be both iconic and explanatory (physiological diagrams); technical drawings can be both iconic and operational (maintenance diagrams).
Motivational	- To indirectly assist learning by keeping the student interested in the text, e.g. cartoons, pictures of famous people, pictorial settings. These visuals help the subject matter to "come alive", but do not address directly the major idea(s) presented in the text.

Directional - To provide cues which help guide the student through the text and supporting course material.

MODE

Illustrations - Illustrations are drawings, usually prepared by visual designers at the Institute.

Photographs - Although the Institute shoots its own photographs, the majority of these are copyrighted works obtained from outside sources with appropriate payment and acknowledgment given.

Conclusion

Visual design in a distance education institution or department is often an unappreciated aspect of the operation since distance education courses have traditionally comprised typewritten notes with scarce and simple illustrations. This paper has described one institution, the Open Learning Institute, that has incorporated visual design as an integral part of the course development process. Visual designers work within the constraints of a well-defined industrialized approach to course development, yet are allowed to maintain the unique and individual styles of their work.

The classification scheme and examples given in this paper illustrate the many important uses of visuals in self-instructional materials: instructional, directional and motivational. These examples are just a few of the more than 5,000 visuals already used to support students enrolled in distance education courses at the Open Learning Institute.

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LEARNING, THINKING AND COMMUNICATING THROUGH DIAGRAMS

by

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Experimental research and classroom exploration suggest that student participation in diagramming activities supports learning of subject matter relationships while fostering development of valuable skills in visual thinking and communication. Whenever students are to learn about interrelationships of information networks, diagram production is an appropriate instructional strategy.

Cognitive and perceptual research, theories of linguistics and hemispheric brain specialization, and my investigations of the visual design traits in diagrams suggest the potential value of diagramming for learning. The importance of diagrams for learning involves the fact that in diagrams both visual and verbal elements combine to convey meaning. Consider the nature of diagrammatic messages.

Diagrams describe relationships. They present relationships in a way that differs fundamentally from other forms of communication like sentences, paragraphs, outlines, and lists. While paragraphs, outlines, and lists are entirely word dependent, diagrams combine both words and spatial elements into maps of information networks. By depicting relationships as diagrammatic networks, the communication of information structure becomes less word intensive. The visual components of diagrams carry part of the message.

Differences between exclusively verbal and combined, visual/verbal statements of relationships are obvious at first glance. Figure 1 shows the visual impact of verbal forms to be linear and hierarchical.

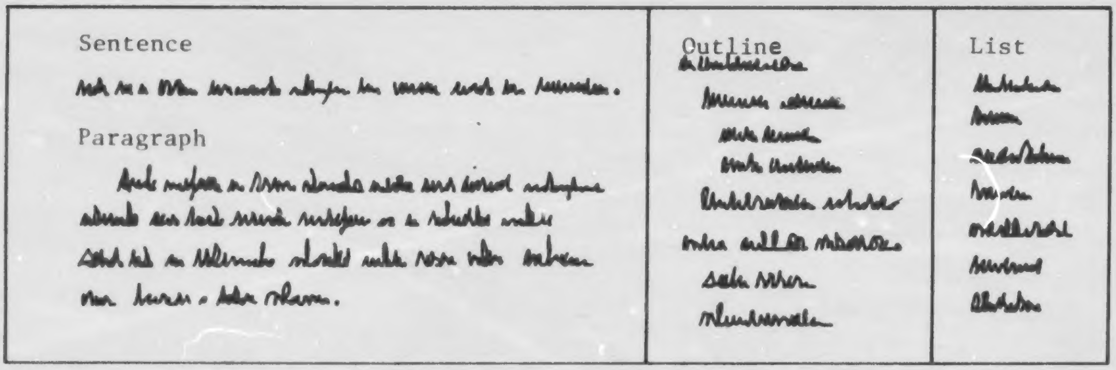

Figure 1. Visual impact of verbal forms.

The diagram structures in Figure 2 show that visual design principles can describe the relationships between abstract ideas, items, or events.

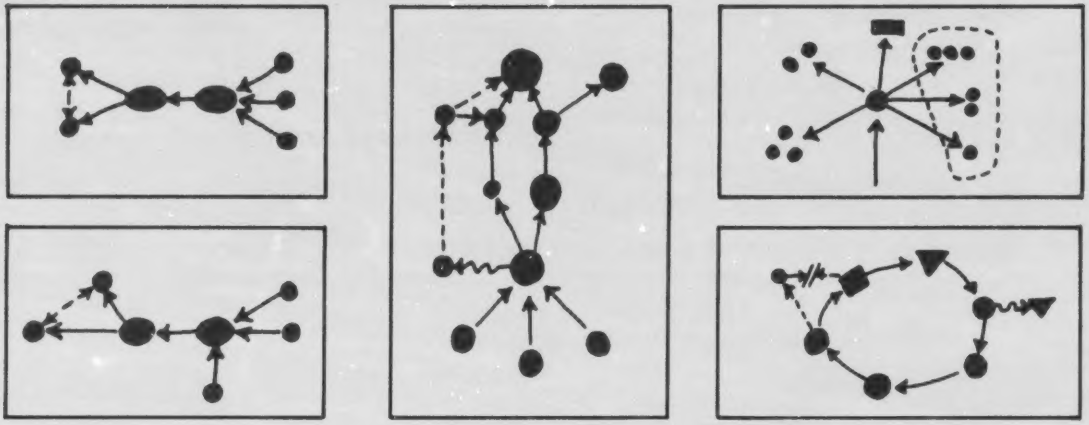

Figure 2. Examples of visual design principles.

Design principles that influence visual communication include symmetry and asymmetry, divergence and convergence, proximity and grouping, juxtaposition and progression, contrast, as well as linearity. Design elements combine to convey design principles. Commonly used elements in diagrams are connectors (lines and arrows), dividers (bars and empty spaces), and enclosures (boxes, circles, and other shapes). Diagram producers and viewers "read" meaning through skillful use of design components. They are a nonverbal system of abstract communication.

When learners organize a given set of entities and connect them into a meaningful network, they learn more than simple sequencing skills. Students discover that they can communicate abstract concepts through diagrams by using convergence and branching, symmetry, parallelism, and grouping. These design traits are part of a visual language that research shows most adults understand and use with varying degrees of effectiveness (Hardin, 1982).

> *"By incorporating diagramming into regular classroom practices we are encouraging more sophisticated use of this visual art."*

By incorporating diagramming into regular classroom practices we are encouraging more sophisticated use of this visual language art. At the same time, students learn subject matter networks in an effective, enjoyable, and inexpensive fashion.

Following a visualized presentation of the above theory, participants constructed diagrams and compared their experiences. This informal beginning prepared the way for further discussion of theory and rationale for diagramming as an instructional strategy. The main portion of the session addressed practical aspects of integrating diagrams and diagramming into curricula from elementary grades through adult education. Participants learned how to identify appropriate subject matter for diagramming. Important considerations influencing preparation of diagramming assignments included analysis of concepts for diagramming and selection and control of diagram elements. Various options for actual conduct of the diagramming experience were proposed, supported by slides of diagrams made by learners from the elementary grades through graduate levels. The presentation concluded with descriptions of techniques for guiding the student diagrammer and for interpretation of diagrams by diagrammers, teachers, and student groups. Slides of student diagrams demonstrated a wide range of diagramming skills and multiple solutions to diagram design problems.

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WHY TAKE ART?

by

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English is a compulsory subject because we need to be literate in order to communicate. However, despite the fact that we are constantly bombarded by images, absorbing much of their information subconsciously, the need to be visually literate is rarely considered a priority. It is of crucial importance that we begin to consider visual literacy a priority. Until we do, we are keeping ourselves at a grave disadvantage.

Images are all around us; what happens when we look at an image? We see all of the information contained in it at once, in one go, but few of us have the ability to appreciate more than the obvious. Even fewer can make the transfer of verbalising what we see. We leave a massive area of possible communication unused. In fact, because of the subconscious way we absorb information from images, advertisers are able to manipulate us, since they have spent millions of dollars researching this massive potential. In our ignorance we are very vulnerable.

> *"In order to understand the images created by others, we need to develop our visual comprehension skills. We must learn to decode images in much the same way that we learn to decode the little squiggles we call letters."*

Making images is one way of understanding how images "communicate," because we have to take our ideas, take them to pieces, and put them in a form that others can understand. In order to understand the images created by others, we need to develop our visual comprehension skills. We must learn to decode images in much the same way that we learn to decode the little squiggles we call letters. The old adage tells us that "a picture is worth a thousand words." It's true--but only if we can "read" the picture.

When we think of "smart," "bright" or "intelligent" people we think in terms of I.Q. It is an obvious and established fact that I.Q. tests measure only what they are designed to measure, which is our ability to use linear, logical thought patterns. Most of our schooling fosters and applauds this type of thinking, typified by mathematics, in which Step 1 is followed by Step 2, followed by Step 3 to arrive at the logical answer. These processes are fine and creditable in their context, but they must not be mistaken as the only fine and creditable type of thinking.

The type of thinking involved in art and other creative activities is much more holistic and divergent. It is necessary to see patterns and relationships, to be able to make conceptual leaps, to be able to relate the seemingly unrelated. There are few ground rules with this type of thinking. As a part of natural development, every child is able to use his/her mind this way at the age of approximately seven. The name given to it is "complex thinking." After that age, however, it usually becomes sadly neglected, and withers for lack of practice, stimulation or approval.

Relatively recently, there has been much research into the functions of the left and right hemispheres of the brain. It is now very clear that it is primarily the left side of the brain which is responsible for our linear, logical mode of thinking. This means that for many of us, education is leaving us with half our brain capacity as a virtually untapped resource. The problem is that, like muscles which are not exercised, this unused portion of the brain becomes increasingly difficult to make functional. Can we afford to waste half a brain?

What is a school art course all about? It is not about making artists. A few will possibly continue from school beginnings and make art. Others will use their skills and interest for rewarding and satisfying recreational activities in later life. However, what is most important for all students is that art courses must be an essential part of educating the total person to be able to make viable decisions in our modern society.

These decisions will range from the practical to the sociological--from creating a harmonious home environment, through an enlightened understanding of colour and design, to developing a defensive awareness in order to cope with the barrage of visual information thrust out by the media.

BRAINSTORMING VISUAL LITERACY IN ART EDUCATION

by

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AUTHOR'S NOTE: The following was generated as a result of a session attended by Canadian art educators who, in an open forum, discussed the problems and needs of education with specific regard to the role of visual literacy in art education.

Traditionally, neither art education nor art educators have admitted that visual literacy is a viable and integral part of the field. Only a very few persons or programs have been involved with curricula which utilize or, at the very least, incorporate visual literacy skills and content in the educational program. It is apparent, however, that a relationship does exist between art education and visual literacy, and that the vitality of both education and art education programs can be capitalized on when it is tapped. If art education programs are to become (and remain to be, in those few cases where it is already true) viable educational entities, visual literacy must be built into--become a foundation for--art education.

This must be done carefully, for confusion does exist among those who hear the term "visual literacy." Misdirected programs result when they are built upon faulty premises. It is necessary that a simple, clearly stated definition be developed for presentation to those in the fields of both education and art education. Until that is done, no positive response can be expected to be forthcoming, and the possibility of incorporating visual literacy programs in schools will be severely hindered.

As most definitions of visual literacy are directed to scholars, there seems to be little applicability to the field. Thus, a definition is offered which states that it is "the possession of the ability to understand and draw conclusions from those visuals which comprise the physical environment, and to be able to use effectively those skills for the purpose of communication."

As practitioners are no doubt aware, there is a great deal more to visual literacy than this, but such a brief description as that found above will be acceptable to more people. This will be particularly true when used within an educational context where it will be possible to create a learning environment where necessary activities can be implemented.

If such a definition is accepted by the uninitiated, it will then be necessary for those individuals to support the inclusion of visual learning and literacy programs in the school curriculum. It will be necessary for those involved to be able to answer questions posed by their colleagues and school administrators.

Those questions will be centered on the value of visual learning, its relationship to the child's ability to develop basic skills, and why it has become so important now, when for years education did so well by using traditional learning programs.

Those answers given to questions asked must be direct, and must stress that visual literacy programs emphasize integration into extant educational programs, and will not necessarily stand as unique, self-contained classes. It will be important to explain the manner in which connections can be made through involvement with visuals and the development of visualization skills by the children involved. And, it will be of particular importance to indicate the changes which can be expected in children as a result of their participation in visually oriented learning programs.

As well, it would be necessary to point out to educational personnel (though not to the point of destroying their support systems) that the field of education has taken an unusual turn due to a variety of factors. Where it was possible some years ago to say with confidence that education was concerned with and taught children, it is now true that primary emphasis is placed on the teaching of subjects. This change has resulted in children who are more poorly prepared as regards general skills and thinking ability, and who are certainly less able to function intelligently within a broader cultural and economic context.

To some, this is anathema. It is antithetical to the purpose of education particularly in light of the fact that evidence does exist that children who have had the opportunity to participate in visual learning programs are better skilled in many ways than their counterparts. The introduction of "visual literacy" techniques and programs in the school curriculum will move education back to the business of teaching children. Subjects would not be ignored, rather they would be made secondary to the individuals to whom they are presented.

Placing emphasis on the child results in education becoming a more active process both in tangible and intangible ways. The business of being actively involved in learning (a major thrust of visual literacy programs) runs parallel to the notion that children's ability to think will be enhanced as will the "mind," that most elusive quality that says who and what each of us is as a human being.

Art education and visual literacy are highly integrated and interactive. Purposes and content intermingle and provide a substantial basis for introducing children to a new system of learning, knowing, expressing and being. School programs which demonstrate a willingness to provide children with the opportunity to participate in art education/visual literacy programs will realize their value as the end product--the educated child--comes out of the school program.

What remains is for art educators to assume a position of unity, and to take an active role in the process of implementing innovative programs. Until that time, neither education nor children will utilize or meet their potentials.

ALADDIN'S LAMP

by

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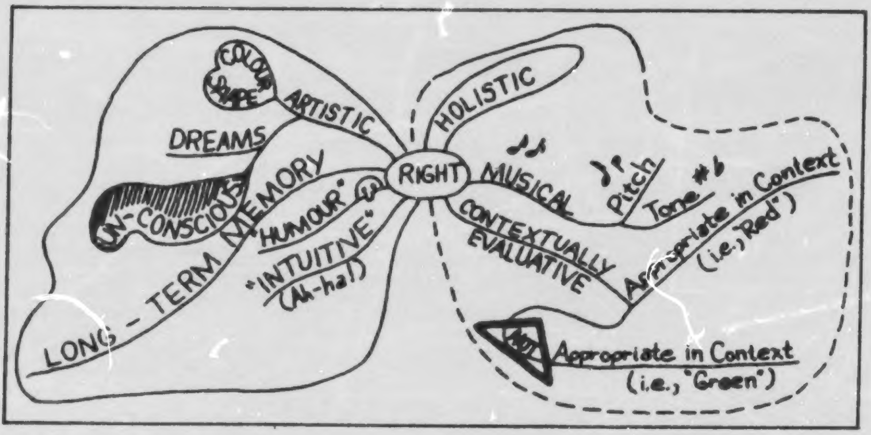
This paper presents the results of the use of visual techniques to teach writing skills in business and academic settings. The paper divides into five major sections: introduction of working hypothesis, declarative sentences, essay/report writing, learning review, and applications for teaching math, music, art--at adult levels. This paper stems from my wish to pass on a technique that seems as powerful a stimulant to the human mind as the genie in the the lamp was to Aladdin.

We are growing accustomed to talk about the right/left cerebral hemispheres. However, the implications of this knowledge to learning remain hidden. Like Aladdin, we have to learn to rub our old lamp in the right way at the right time. To rehearse some of the capacities of the left brain, it is:

Sequential;
"Logical;"
Rigidly evaluative; i.e., 6 x 21 = 15 is "wrong"
    6 x 21 = 126 is "right;"
Concerned more with chronological time than spatial relationships;
The usual location of short-term memory;
The domain of numbers and letters.

Of course, almost all education is limited to left-brain learning. This distressing fact stems from the need to evaluate learning. What are the two major ways we measure learning? By counting the numbers (left brain) of correct/incorrect answers, and by counting the syntactical or spelling errors in written compositions (left brain). Multiple choice questions, questions with "right" or "wrong" answers are usually restricted to the left brain.

On the other hand, here are some capacities of the right brain:


COLOUR
SHAPE
ARTISTIC
DREAMS
UN-CONSCIOUS
LONG-TERM MEMORY
HUMOUR
"INTUITIVE" (Ah-ha!)
RIGHT
HOLISTIC
MUSICAL
Pitch
Tone
Appropriate in Context (i.e., 'Red')
CONTEXTUALLY EVALUATIVE
NOT Appropriate in Context (i.e., 'Green')

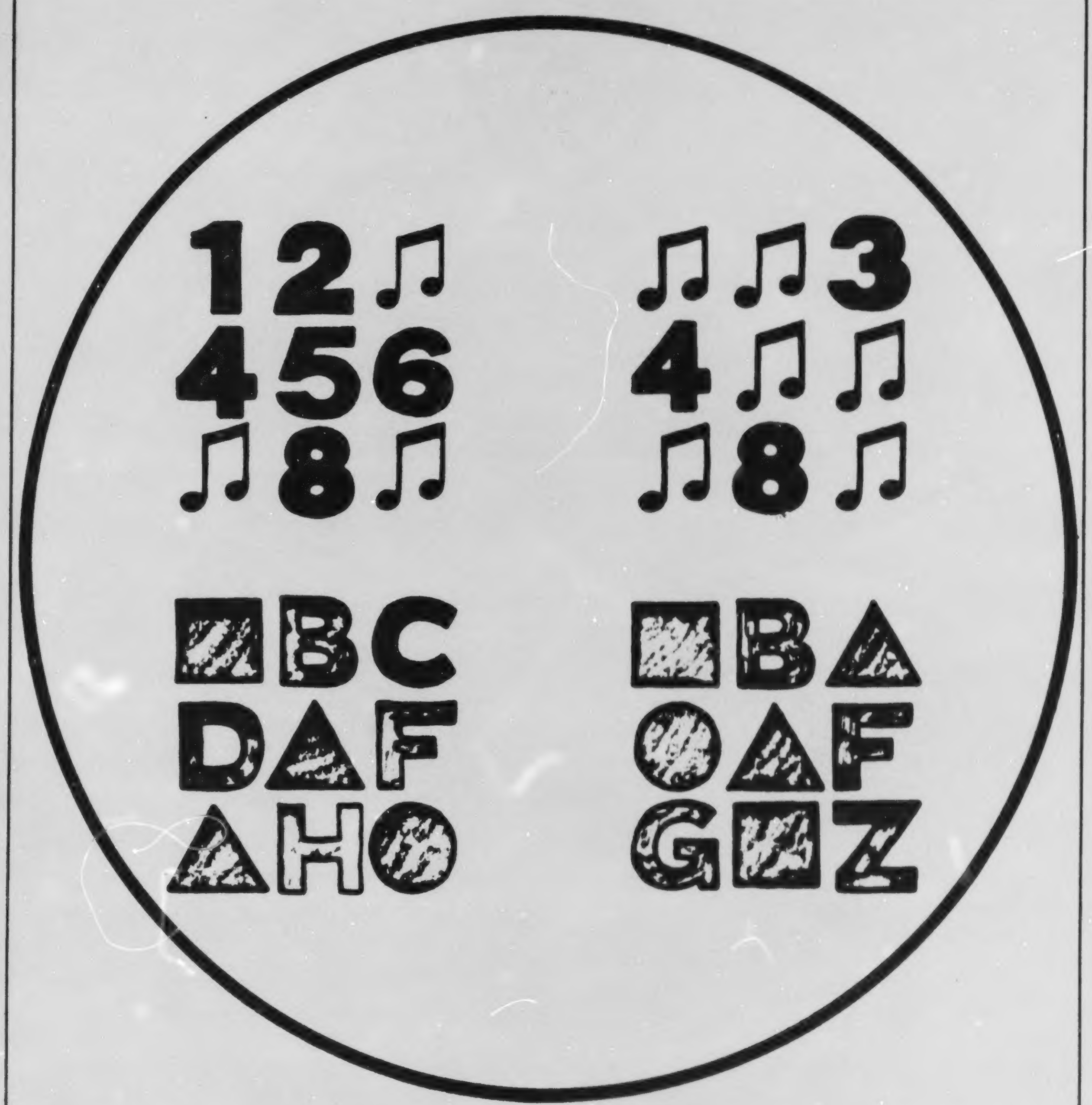
With increasing emphasis on right-brain learning, those of us who teach sequential skills like writing or mathematics face an increasingly reluctant and unskilled group of learners. What should we do? Recommend a "back to basics" approach? This simple-minded "solution" is not only silly, but also dangerous to the social good. After all, the basics have always been merely "reading, writing, and arithmetic"--left-brain sequential thinking skills. We want our learners to educate their whole minds, not just half. The answer, it seems to me, must be to provide various roads into our subject areas.

> *"With increasing emphasis on right-brain learning, those of us who teach sequential skills like writing or mathematics face an increasingly reluctant and unskilled group of learners."*

By various roads, I mean various languages of the mind. My learning model sees the mind as divided into two hemispheres, with each of these spheres also divided in two. On the left, we have the manipulation of: 1) Numbers (i.e., mathematics, physics, chemistry, engineering, etc.), and 2) Letters (i.e., English composition, history, philosophy, law, psychology, etc.). On the right, we have the manipulation of: 1) Pitch/Tone (i.e., music), and 2) Colour/Shape (i.e., art). Naturally, my model is less effective as regards the right hemisphere, which resists translation into words. Also, we have as yet no faculties of smell, taste, and the like!

Now it seems probable that if someone likes to write, they will be easy to teach. However, if they loathe writing, they will be extremely difficult to teach. My hypothesis implies that those who fear writing are likely to be "right-brain" learners. The way to teach them, therefore, would be through right-brain terms: art and music. There is no point in enforcing rigid sequential learning rules. I attempt to speak to them in their native language, and to guide them into sequential tasks slowly. Naturally, the same goes in reverse for someone teaching art to a student of mathematics or linguistics. An example of a book that succeeds in doing just this is Betty Edwards' marvelous Drawing on the Right Side of the Brain (Boston: Houghton Mifflin, 1979), which has no doubt earned the genie's envy by transforming even a lecturer in math or English into a budding artist. Of course since we all end up teaching the language we know and like best, we must make a special effort to learn the other languages in order to reach those learners who need us most. The visual, "Four Languages of the Mind," diagrams the result at which I think it is proper and appropriate for us to aim: mutual support and integration of all the brain's capacities when learning any single subject. As the philosopher Spinoza pointed out two hundred years ago, "all things excellent are as difficult as they are rare."

Interestingly, most creative books putting forward "right-brain" methods fail to put their words and ideas into logical sequence. I am thinking here of Superlearning (Dell, 1979), by S. Ostrander and L. Schroeder, which boasts sporadic organization and sequencing of ideas, as well as other "creative" books too numerous to count. This is a pity, because the audience which most needs to be reached is precisely the audience which appreciates


12
3
456
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8
8
BC
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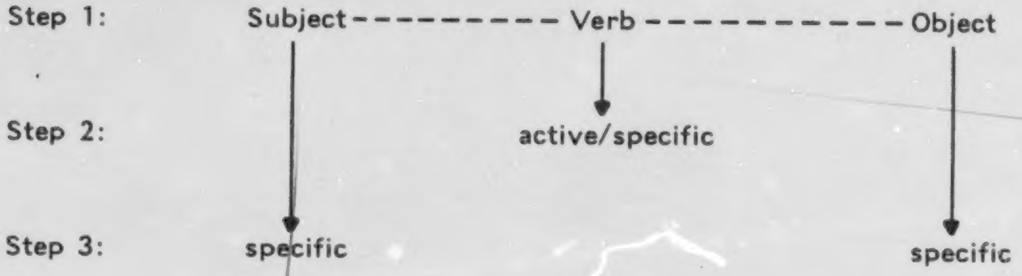
FOUR LANGUAGES OF THE MIND

logical sequencing skills. But we all know the frustration of the music student, who on being closely questioned how he felt by the analytic, replied, "Oh, I dunno. Sort of B-minor, I guess." Or the artist, who when asked to explain the meaning of his abstract composition of blue and gray tints (in words, of course), simply stammered and pointed his finger at his canvas. It is always frustrating to be asked to talk in an unfamiliar language. My point is that it is equally frustrating to be asked to learn in an unfamiliar language.

> *"It is always frustrating to be asked to talk in an unfamiliar language. . . . it is equally frustrating to be asked to learn in an unfamiliar language."*

Having pointed out some of these difficulties, let me go on to share some techniques I use to teach writing skills. My basic audience comprises first-year college students who are native English speakers, plus middle managers in the business community and public service organizations. The examples I am offering here come from my business writing workshop, called Writing Power, which takes four full days to complete; however, I use the same techniques in my regular English classes at Capilano College, over a fourteen-week term.

One thing I teach is the simple declarative sentence: subject-verb-object. I want my learners to recognize the active voice, to use active and specific verbs, and to use specific nouns. I ask them to do this in three steps, as diagrammed here:



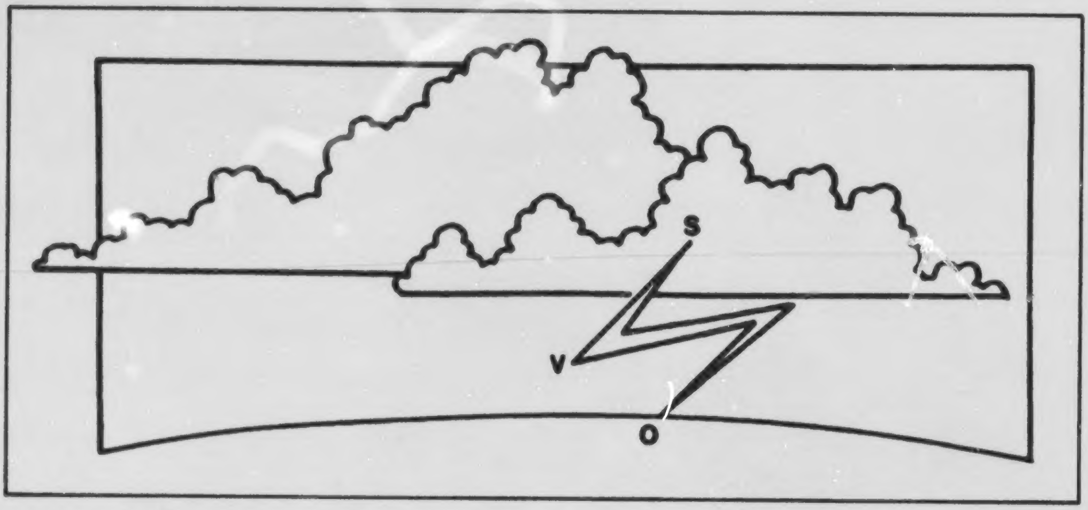
If the original sentence were, "The report was handled by the executive member," it would be transformed in three steps as outlined above:

Step 1: The executive member handled the report. (S V O)

Step 2: The executive member shredded the report.

Step 3: Prime Minister Trudeau shredded the Gallup poll on popularity.

In order to visually implant the S-V-O order concept, I draw the following diagram:



and then discuss how it highlights in visual form the fact that a verb should illuminate and energize, while the terms subject (cloud), verb (lightning bolt), and object (earth) should be specific. As we expect of visuals, these remain in learners' long term memories for years. I do a great deal more with this diagram, but I've said enough here to make the point of one way visuals can carry the notion of sequence.

As well as declarative sentences, I use visuals to teach essay writing. The heart of my method is the use of "cue cards" (3" x 5" index cards) to sequence ideas. Learners put a single discrete "bit" of information on the cards, then arrange the cards sequentially before starting to write their reports/essays. The principle is much the same as in Chinese cooking, where chicken is cut into small pieces before being "stir-fried" over an extremely hot flame, so that the cooking takes place in three minutes--rather than the two hours it would take to bake the same chicken in conventional western fashion. My method offers the same advantages in time-saving.

However, right-brain learners resist sequencing. To make the task palatable, I inject a right-brain component. I have them form teams of four, and play with a building set. They create a model of some structure never seen before, name it, and invent a function. Figure 1 is an example of such a creation. It is a "Schlimp," and its purpose is to process "schlimpets."

The learning task is to write a report on how to re-create a "Schlimp," and the testing method is to pass the report on to a second group for re-creation. The second group passes their report to the first group in exchange. Then both groups attempt to make sequential "sense" out of the other's instructions. Usually, they succeed in replicating the other model from the written instructions. The visual and tactile elements make the exercise fun, though much encouragement is needed during the dry and dusty sequencing stages.

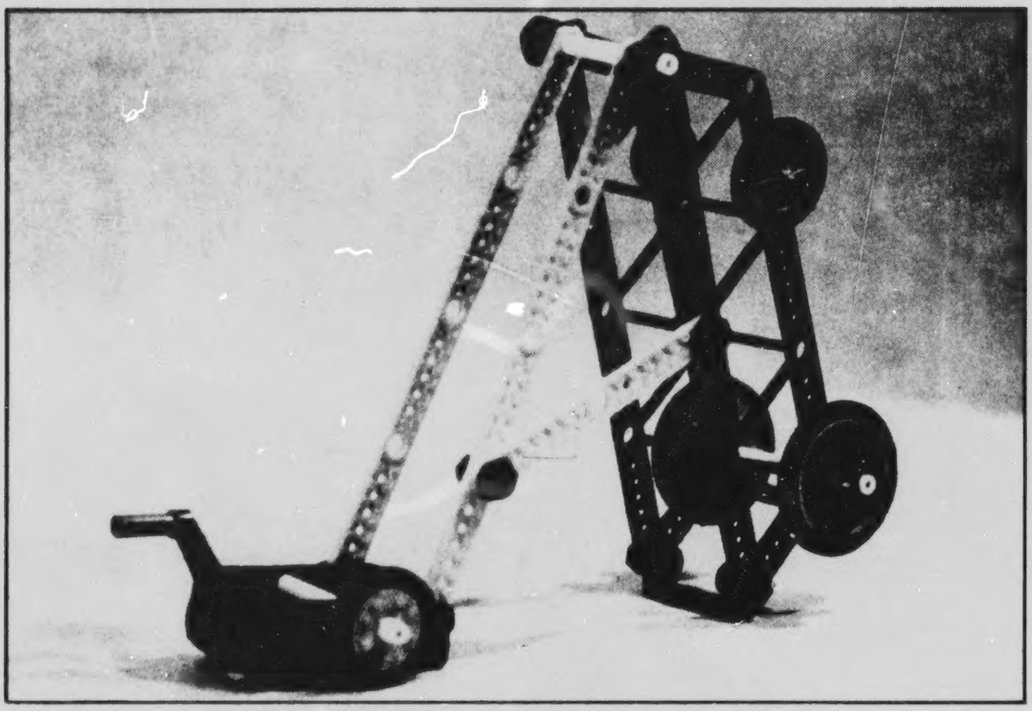


Figure 1. A "Schlimp" for processing "schlimpets."

I also use visuals for review purposes. At the end of the workshop, learners put concepts taught into visual form. They work in groups, on flip-chart paper, to make a group record of what they remember, or would like to remember about the course. The idea here is to implant key ideas in the long-term memory, and associate feelings of play with writing, so that in the future they will approach the sequencing tasks with fresher minds and greater confidence. An example of such cartoon records is provided in Figure 2.

Such techniques as I have discussed could be used to teach any other discipline. For example, in Figure 3, a phonic "talking letter" combines visual with verbal cues. On the back of the card, a story is told about a cat who is always angry, and whose tail curls high above his head as he says "f-f-f-f." Children can play the cat, putting their hands above their heads like his big ears and saying "f-f-f-f." It shouldn't be too hard to invent an equivalent for older learners.

Another technique to link visual and musical cues occurs in Die Liederfibel (Dusseldorf: L. Schwann Verlay, 1969), where the musical text for "Hansel and Gretel" occupies the left page, while the right page presents a line of fir trees that grow or shrink according to the pitch of the musical note represented, with higher trees standing for higher pitched notes.

Similarly, if one wanted to teach mathematics, such as an algebraic equation, to a musician, one might consider simple analogies. For example, $(a-b)^2$ might be rendered musically as the chord A minor, followed by an upstroke to signify the minus sign, followed by B minor, with the whole

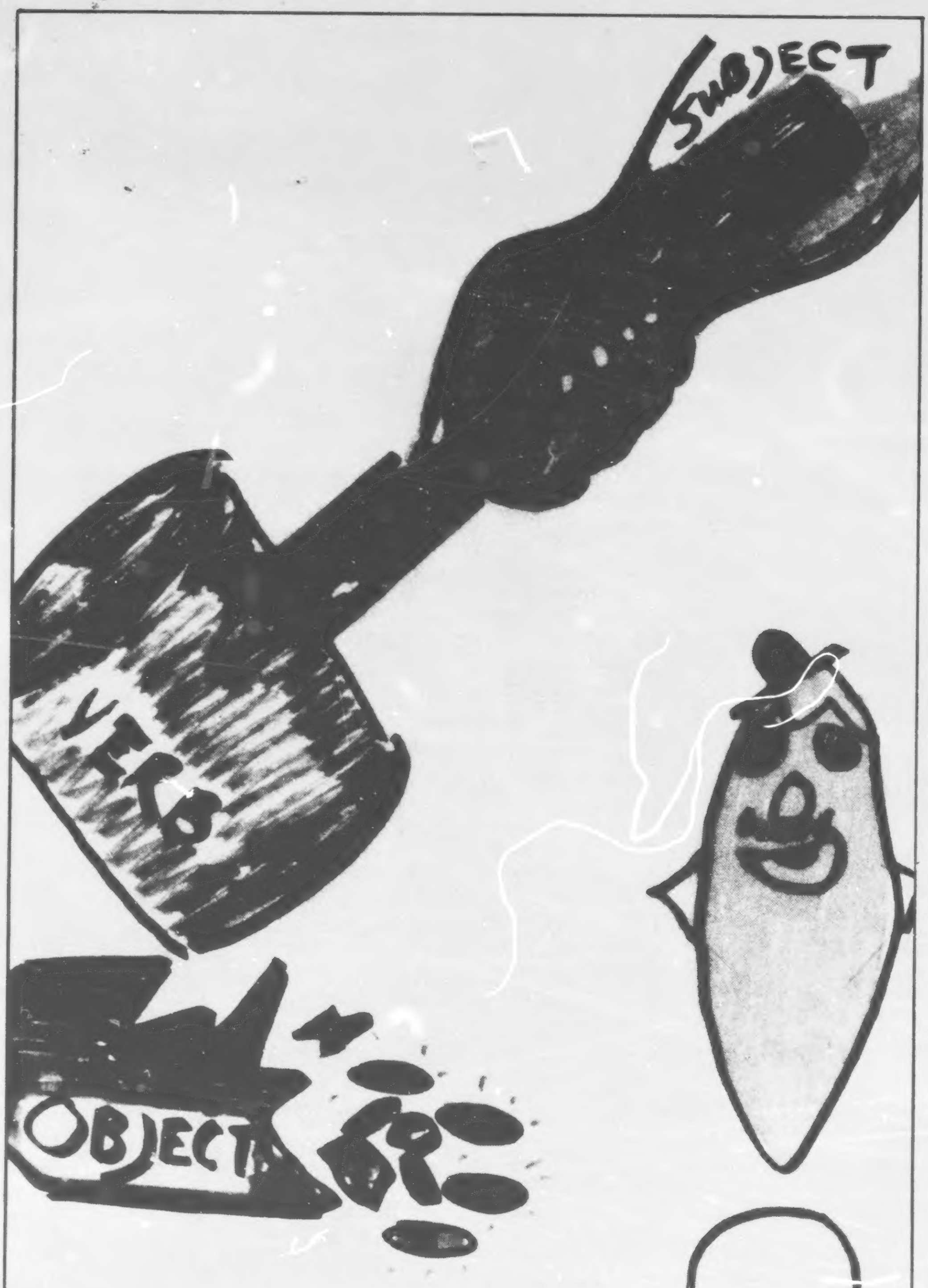

SUBJECT
VERB
OBJECT

Figure 2. Example of cartoon record of course highlights.

phrase repeated to signify the squaring effect. Challenging a music student to find appropriate analogies might make the exercise fun, put the student on firmer ground, and lead to discoveries about the similarities between math and music that would lead to further success. Similarly, Pythagorean theory might be explored to show the relationship between the intervals of the musical scale, the notion of proportion in Greek architecture, and the system of numbering from 0 to 9.

If the ideas mentioned above seem relatively undeveloped, it is because the whole notion of integrating our potential remains to be pioneered. We must start with ourselves, learning the languages we do not already know. In this way, we can bring into sight the genie within who has been waiting for thousands of years to emerge.

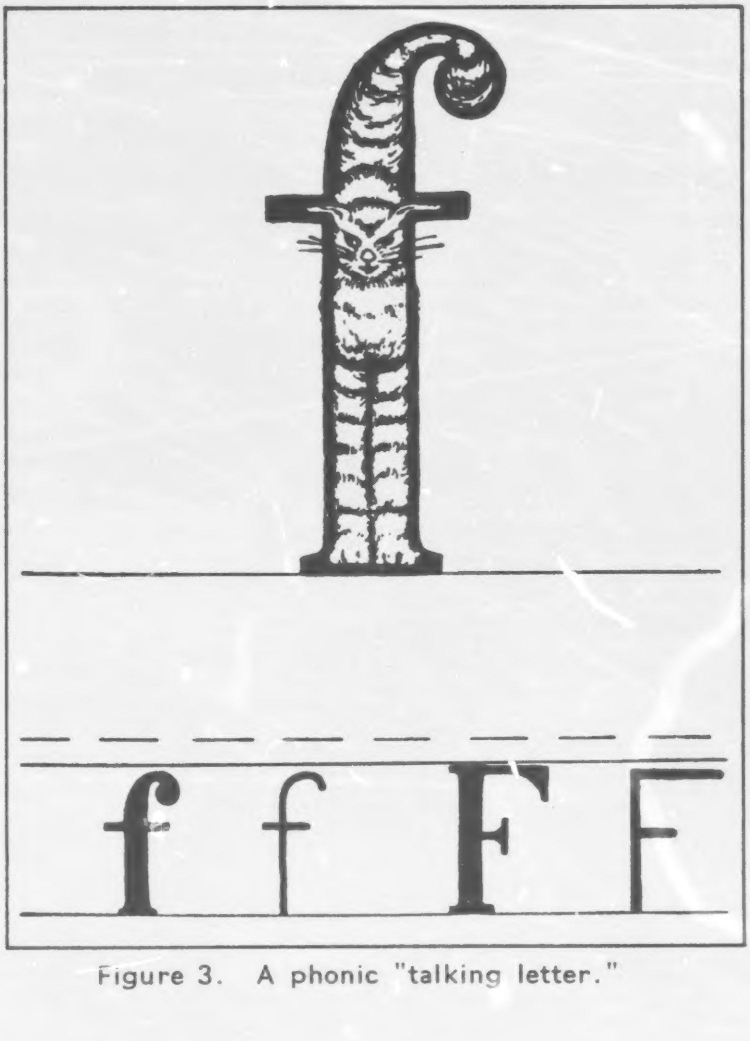


Figure 3. A phonic "talking letter."

HOW VISUAL COMPOSITIONS AID VISUAL AND VERBAL LITERACIES

by
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Teachers of both visual and verbal literacies can use visual compositions to help students become better thinkers, readers, and writers. A visual composition is a grouping of pictures, photos, or slides which suggests a unified story or theme. Any life experience that can be captured in pictures can provide subject matter for a visual composition, and as Eckhardt noted (1977), there is scarcely a subject of school study that cannot be expressed visually.

Visual compositions can be prepared a number of different ways. Teachers can create or photograph their own visual stories or they can train students in how to use the camera to create photo essays (Debes, 1975; Collins, 1980). The teacher's objective in structuring a visual story is to influence students to compose and write their verbal stories in the way that the visual story was organized. I will show a bit later in this article that there are at least seven visual composition arrangements that teachers can use to influence students' writing styles and reading comprehension strategies. Popular magazines such as Life, National Geographic, or Sports Illustrated generally portray a number of pictures that relate to one central theme. The cut-out pictures can be arranged and rearranged to tell stories in different ways. Ads can be used to show students how decisions they must make in their writing are similar to the choices that advertising copywriters make in promoting products and convincing audiences to buy them (McQuade, 1976). However, preparing visual compositions from slide sequences is my favorite way to involve an entire class group in the same concrete experience. Projecting slide stories capitalizes on the movie-type format, immediately engages the interest of the viewer, and will motivate even the most reluctant writer.

". . . there are at least seven visual composition arrangements that teachers can use to influence students' writing styles and reading comprehension strategies."

When students themselves are shown how to compose through the nonverbal, visual eye of the camera their overall thinking and literacy levels can be improved. This occurs because composers of visual compositions can be compared to writers in their roles as transmitters of information. The visual composer learns to combine objects, space, light, angle, and mood to suggest a particular message or effect just as the writer uses words, sentences, and paragraphs to achieve a particular style. Furthermore, as the writer selects words that have objective and emotional connotations, the picture-maker conveys images that work on many levels to suggest humor, irony, or symbolic commentary (Eckhardt, 1977). Once students themselves are shown how to develop a visual theme or photo essay in a sequence of pictures, they learn how to use imagery to plan the parameters of a shot before its actual occurrence, and they learn how to use design and movement to establish visual continuity (Kaplan, 1976). The visual composer will also learn that the world often looks a little different through the view finder. The most commonplace object can assume a delightful countenance if photographed under the right conditions and if juxtaposed with the right associative details. Those who start squinting at details of their environment are almost always delighted with the exquisite colors, shades, and textures that materialize before them and suddenly begin to look at the world with an entirely fresh and dynamic point-of-view (Cameron, 1980). In one visual literacy project, migrant youngsters who were given the opportunity to become visually literate by planning and photographing their own stories sharpened their self-concepts, deepened their environmental awareness, and discovered new parallels in verbal language--in its phonology, morphology, and syntax (Fransecky, 1969). In another instance, the combination of shooting pictures, acting out present roles, and verbalizing about the visual experience helped second language learners make solid progress in reading (Debes and Williams, 1974).

Thus, an analogous relationship appears to exist for viewing and visual composing as it does for the written literacy experiences of reading and writing. We can say that reading is to writing as viewing is to visual composing for participants in visual/verbal literacies. As composing through the camera's eye heightens one's awareness of the nonverbal, visual world, composing through written language helps one to become a better reader. Moreover, when students become active participants in nonverbal, visual literacy strategies that incorporate verbal strategies as well, they will intellectually benefit from the dual involvement of both brain hemispheres. Both brains will be activated through the visual composing, the imagining, and the anticipated use of language.

How Visual Compositions Influence Students

While visual stories will generate written expression from all levels of students, two types benefit most from their use. The first type is the one who has been categorized as language deficient and who has difficulty in conceptualizing or imagining what to write about. The visuals provide a concrete glimpse of life that the student can match with his/her own verbal account. When the visual story has been translated into a verbal one, the language-deficient student demonstrates that a language facility does exist. The visual composition has provided a holistic means of conceptualizing a theme and a way of eliciting and organizing a written paper. The advantage of using "silent" sequences of pictures rather than film with accompanying dialogue is that students do not imitate a language source but compose their own logical, written stories with their own words and sentence structures.

The second type of student who benefits from visual composing is the one who is influenced in the learning of language through visual/spatial input, a functional specialization of the brain's right hemisphere. This is undoubtedly due to the influence of the media in conditioning an image-centered view of the world (Postman, 1979), and to our ever-increasing knowledge of how right hemisphere preferent learners use the right rather than the left hemisphere for semantic processing (Bannatayne, 1971).

The left brain for most learners is the seat of language specialization. However, the literature has reported recently a high degree of correlation between severe disabilities in the written literacy modes of reading and writing with a corresponding preference for a right hemisphere cognitive or learning style (Guyer and Friedman, 1975; Symmes and Rapoport, 1972; Witelson, 1976 & 1977). Since picture viewing is an activity specialized for right brain processing, picture usage insures that visuospatial competent learners are not denied equal cognitive opportunity in achieving literacy.

Another key strategy in the use of visual compositions is that pictures provide concrete stimuli for the formation of imagery. Imagery, the mental representation of the picture story once the pictures have been shown and removed from view, is recalled more powerfully and more rapidly than words and can provide a means for evoking verbal labels (Paivio, 1971). Haber (1970) showed in his experiments that the capacity for recalling pictures was virtually unlimited and suggested that linguistic recall might dramatically improve if techniques could be found to attach words to visual images. Imagery, also a function of the right brain, is an important element in the production of creativity (Gowan, 1978). The use of visual compositions thus provides a way of achieving cooperation between hemispheric processing while encouraging imagery to aid linguistic recall.

Four Stages of Visual/Verbal Integration

Figure 1 shows that four interlocking stages of visual/verbal literacy occur with the use of each visual composition and indicates the processing mode achieved during each stage. Receptive processing of visual/verbal input occurs during viewing and reading, while expressive language processing occurs during the composing and writing stages.

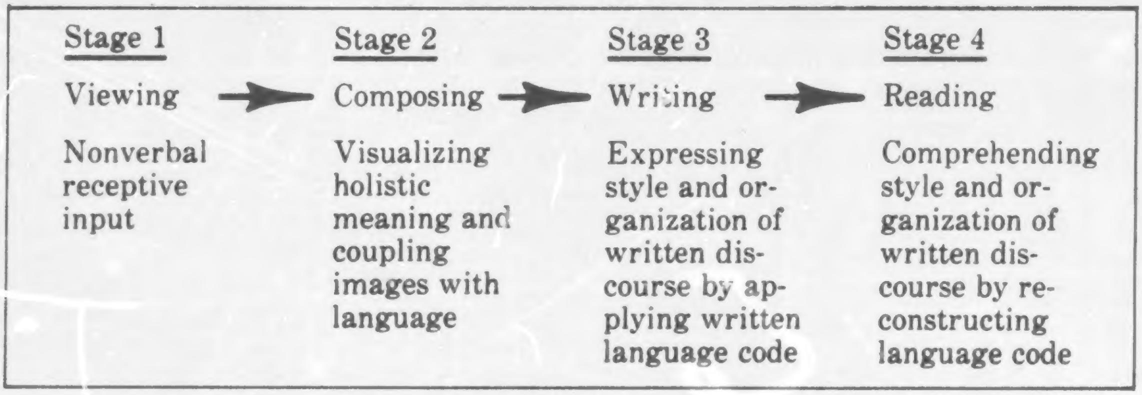
Stage 1
Viewing
Nonverbal receptive input
Stage 2
Composing
Visualizing holistic meaning and coupling images with language
Stage 3
Writing
Expressing style and organization of written discourse by applying written language code
Stage 4
Reading
Comprehending style and organization of written discourse by reconstructing language code

Figure 1. Stages of Visual/Verbal Literacy Achieved with Visual compositions.

The sequence of the stages also suggests that comprehending a style of discourse is a direct function of active involvement in viewing, composing, and writing that particular style. During the viewing stage, students see a series of pictures that have been arranged to tell a story in a particular way. Generally, two showings of each visual composition are necessary to develop both global understanding and sentence level relationships of stages two and three. During the first visual presentation, students sense the contribution of each picture to the development of a unified theme. They should be asked to compose and write a thematic sentence which expresses that central meaning and which provides a point-of-view for their developing theme. During the second viewing of the visual story, students can write individual sentences based on each picture. The important visual/verbal strategy to impart to students is the notion that as each picture contributes a thread of meaning to the visual composition, so each sentence should relate to the central idea expressed in the thematic sentence. Composing and writing interact as recalled images provide concrete experiences for sentence and theme construction.

Finally, reading can be strengthened as an outcome of the visual/writing interaction. Stage four suggests that particular styles of written discourse will become easier to comprehend since students have been actively involved in the construction of that style. After viewing and writing a theme organized a particular way (see Table 1), students can read each other's papers or single papers can be projected on the overhead. They can be asked to determine if papers captured the organizational style of the visual arrangement. Sentences can be abstracted from a number of papers that form a model for that organizational style. Through discussion and the sharing of each other's written accounts, students will recognize the organizational structure which underlies visual/verbal discourse. In essence, the four stage process stresses involvement and interaction insuring that the structure of the subject is meshed with the structure of the student (Moffett, 1968).

Once students understand the relationship between a particular organizational structure and their own writing, they can be given reading assignments that are organized in a similar way. The reading selection will be easier to visualize since students can now compare it to a concrete referent in their experience. Levin (1973) felt that such visual imagining aided the organizational strategies of poor readers because they unconsciously integrated verbal and visual input. When he asked readers poor in organizational skills to imagine a picture for each sentence in a story, they scored 40 per cent higher on a comprehension test than did a control group of similar disabled readers who read the story alone.

"Relational devices between picture ideas do not exist as they do for oral and written expression."

Visual Composition Arrangements and Writing Styles

The following table illustrates that seven visual composition arrangements can influence the writing and understanding of corresponding styles in the written language. Visual arrangements can contain any number of pictures or slides. I use sets of two or more slides when focusing on the comparison/contrast technique in writing and as many as 18 slides when developing a colorful, narrative account of the annual student vs. faculty softball game. Visual composition arrangements reflect the way that themes and pictures can be structured while writing style indicates the way that most students will model their written discourse.

To assist students in the development of a particular writing style, I often provide them with lists of connector words and transitional phrases which are appropriate to that visual/verbal arrangement. As Becker (1978) noted, an interesting comparison exists between picture and verbal stories since the context works slightly differently for each. Relational devices between picture ideas do not exist as they do for oral and written expression. Verbal relational devices would be function or transition words which indicate that written ideas will be related or coordinated in some special way. The words can be distributed after students have completed the two viewings of the visual composition and have begun to write the verbal account. The connectives help them organize relationships perceived in the visual presentation and to achieve smooth coordination between sentences. For instance, to aid narrative and sequential writing, it is helpful to provide students with transition words and phrases, such as "next, meanwhile, furthermore, besides, in addition to, therefore, consequently" which carry the direction of thought forward. Spatial connectors such as "nearby, across, above, below, here" help students organize features within descriptive scenes and relate details in proximity to each other. Coordinating conjunctions such as "but, however, although" will help students contrast ideas. In another source, the most frequent connector words in the written language have been arranged to parallel their use in picture story presentations (Sinatra, 1981).

The visual composition arrangements provide concrete experiences to stimulate student involvement in a meaning-centered approach to written literacy as well as a nonverbal means of teaching the internal structure of discourse. Composing is aided by the use of organized visual stories which help students conceptualize a unified theme. Providing connector words with particular visual themes will further assist students in visualizing relationships and connecting ideas in writing. Moreover, we saw that while achieving whole brain input in literacy development an analogous relationship exists for viewing and visual composing as it does for participants in written literacy. For instance, in composing or writing about the visual compositions noted in the table, the right hemisphere orchestrates the overall theme, recalls images of previously viewed scenes, and visualizes the pictures that may be needed to complete a coordinated effect. The left hemisphere will sequence all the separate pictures into one consolidated essay, will assign verbal labels to visual images, and will indulge in language manipulations and choices to describe the meaning of each part of the essay.

Table 1

Relationship of Visual Compositions to Written Style and Organization

Visual Composition Arrangements	Writing Style Achieved
	Narrative and Sequential Ordering of Events
Show events in a sequence or steps involved in a process. All sports events, contests, adventures, and process-oriented activities show action occurring in sequence.	Narrative and process-oriented construction develops in which the unifying element is time-order or sequence. The writer focuses on sequential telling of events. During initial writing activities, it is helpful to provide students with transition words and phrases that carry the direction of thought forward.
	Description
Present a descriptive scene in which each picture contributes a little more detail to how the scene is organized. Live and inanimate objects could be arranged along horizontal, vertical or distance planes.	The writer describes the scene and arranges features in relation to each other. Connectives that relate spatial orientation will help students coordinate the positioning of characters, objects, and details within scenes.
	Comparison/Contrast
Show how likenesses and differences exist amongst people, events, and surroundings. Styles of dress, eating habits, housing conditions are easy to compare and contrast in visual arrangements.	Students write about similarities and differences they see occurring in the picture presentation and learn the comparison/contrast style of organization. Presenting coordinating conjunctions which signal contrast will aid students in the development of that style.
	Enumeration or Development by Example
Show a picture that presents a group or class and then a number of	Students will name the group to which the separate items belong and then develop each separate

pictures which illustrate examples of that class. For instance, show the group pose of an athletic team and then each member of that team at his/her position.	item in ensuing sentences.
Imply that something happened as a result of something else or that a problem exists. Focus on the central idea and include enough pictures to develop that idea. For instance, by showing a developing storm or hurricane and then the damage resulting from that storm, a cause and effect relationship is visually portrayed. A visual problem can also be suggested with a number of pictures to show how that problem was resolved.	Exposition A number of expository patterns may be developed here, i.e., cause and effect, problem/solution, and development by main idea with supporting details. Sequential arrangement may be featured in the writing style while development of the theme occurs.
Focus on characters who appear to be involved in a controversy or highlight on character who seems to be persuading another to act a certain way.	Argumentation The student uses the style of argumentation or persuasion in developing the composition. Specific reasons may be noted in the details. A dialogue may be written between characters outlining the points of the argument or controversy.
Combine visual arrangements to achieve a more detailed visual story. For instance, the sequence of an event can be shown while additional pictures can highlight the surroundings or locale in which one part of the event occurred.	Combination of Styles Several writing styles may be achieved. Narrative-descriptive writing is rather easy to achieve. Students tell the particular story in sequential fashion while stopping to describe places or scenes in which the action occurred.

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A REPORT ON THE COLLEGE COURSE VISUAL LITERACY: LEARNING TO SEE

by

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I. Introduction

In the Spring of 1982, a new course titled Visual Literacy, 17.202, was taught to 43 sophomores in the Visual Media Program of the School of Communication at The American University (cf. Sutton, Preparing a Required College Course: Visual Literacy, Readings from the 13th Annual IVLA Conference and IVLA Newsletter, Vol. 11, No. 4, for the complete academic context for the course). All students in the class were declared majors in Visual Media or Cinema Studies, professional producers of film, photography and television.

II. Syllabus and Narrative Description of Course

As the syllabus makes clear, this is a large group instruction course with a limit of 100 students, the maximum number of seats in the Wechsler Theater. (An abbreviated version of the syllabus is appended at the end of this paper.)

The first two classes, "The Introduction," dealt with registration information and oriented the students to the course using the syllabus. Selected slides of paintings and photographs were presented during this unit, as well as five films: Olympia Diving Sequence by Leni Riefenstahl; Mothlight by Stan Brakhage; Report by Bruce Conner; Frank Film by Frank and Caroline Mouris; and the opening segment of Hiroshima Mon Amour by Alain Resnais. The purpose of the slides and films was to determine previous knowledge (an imprecise visual pre-test), arouse curiosity and present material demanding a high level of visual literacy for decoding. Assignments were made in the Primer by Dondis (cf. Syllabus, for full references on all books). Each student was asked to bring in a picture or have one taken of themselves that would serve as their visual image in the class. These were mounted on a triptych poster board in collage fashion as a name/face association aid for the class members and myself and the two teaching assistants. Students were also encouraged to form groups for their field trip assignments and for purposes of informal discussion and feedback about the class.

Unit I, "The Science of Seeing," began with a lecture presentation by Charles "Chuck" McVinney of Digital Equipment Corporation of Bedford, Massachusetts. He spoke on Roger Sperry's split-brain research, relating that to Betty Edward's Drawing on the Right Brain (a copy of which went on the reading reserve the week of his presentation). He related both of these to his own work in management training and development for Digital. Work in Dondis, which included students doing the creative exercises at the end of each chapter continued. Slides and overhead transparencies were employed to inform the students on how we see and the elements of perception, stressing especially the contributions of Gestalt psychology.

"The Art of Seeing," Unit II, involved more work in Dondis, the readings/illustrations in Lowry and the presentation of slides from Lowry for class discussion. Another guest lecture was given by Alan Feltus of the Art Department at The American University. Using slides, he explained in rich detail how he creates a painting. His work had been featured in a 1981 edition of LIFE magazine. The field trips to area museums, especially the Hirshhorn where a Feltus painting was on display, were stressed, and A Place To Be, a film on the construction ot the East Wing of the National Gallery of Art, was screened. Work to date was reviewed.

Unit III, entitled "A New Way of Seeing," dealt with photographic images and the invention of photography. Many elements begun in the painting unit, such as composition, line, space, color, perspective, etc. were continued in this unit. Readings were from Szarkowski, and the work in Dondis continued. Field trips to photo galleries were stressed and the third guest lecturer, Professor Ann Zelle, of American University's School of Communication Photographic Program showed highlights of key works in the development of photo art. All work to date was reviewed and a mid-term exam was given on March 4, just before Spring Break.

The fourth unit, "Reading the Moving Image and Sound," began with the presentation of a number of different slide tapes, including What is Media?, Summer in the City, Forty-Three Years of Teaching and You Light Up My Life, the last involving a Super 8 mm film in a mixed media presentation. The readings were from Huss and Silverstein and the exercises concluded. Slides on "How To Read The Magic Lantern!" were used to give historical perspective and to expose the students to the complex yet simple language of film. Basic Film Terms by Sheldon Renan and a film graph developed by Tony Hodgkinson of Clark University in Worcester, Massachusetts, were also used to focus and reinforce the students' use of moving image terminology. Ed Cockrell, an alumnus of AU and until recently the Program Planner for the AFI Theater in Washington at the Kennedy Center, gave the fourth guest presentation on film style and language. Films used in this unit included the rescreening of the Oympia Diving Sequence, the CLIO Educational Reel (especially Starve a Rat) and Glass, a Dutch film by Bert Haanstra. A quiz was given at the conclusion of this unit.

Unit V, "Seeing the Future," was based largely on John Berger's book, Ways of Seeing. This went against the grain of much of what the students had learned. The unit was designed to raise consciousness about relativism and assumptions behind visual communication and thinking. The readings in Dondis concluded and a number of avant garde film issues were adressed. These included "mock documentaries" (Survival Run and Olympia), "abstractions in film" (Mothlight and Cosmos by Belson), "subliminal ads" (Chanel #5).

There was a session for review and evaluation of the course. The final exam was given on May 6, a Thursday, from 8:30 a.m. to 11:00 a.m. The course covered a 15 week period and met 28 times.

III. Results and Evaluation

The grade profile of the 43 student class was:

A	1	C+	11
A-	2	C	17
B+	1	D	1
B	1	F	4
B-	4	I	1

Note: If grade is C- or below, the course must be repeated before further work may be attempted in Visual Media.

20% of the students received honor grades A to B-
65% of the students received passing grades
15% of the students received failing grades

Student evaluation of the course was based on 74% of the class participating; 32 of 43 were in class that day and responded (cf. Evaluation form in Appendix).

In response to the question "Did the course fulfill its own stated objectives?"

7	very well	22%
18	well	56%
5	average	15%
2	fair	7%
0	poor	

or 78% rated course good to excellent
or 22% rated it average or below

Students rated the Units as follows: maximum points possible on 5 point scale were: High 160 = all 5's; 128 = all 4's; 96 = all 3's; 64 = all 2's; 32 = all 1's.

Introduction = 109
Unit I--Science of Seeing = 108
Unit II--Art of Seeing = 111
Unit III--New Way of Seeing = 113
Unit IV-Moving Image and Sound = 131
Unit V--Seeing the Future = 99

Note: Highest was the Moving Image Unit--131; Lowest was Future--99. All units at slightly above average to good level.

Students rated the books used as follows: (same maximums as above on Units).

Dondis = 106
Lowry = 114
Szarkowski = 119
Huss & Silverstein = 107
Berger = 107

Note: All books at slightly to well above average--Szarkowski high at 119 and Dondis low at 106 but no outstanding high or lows.

Other matters referred to in the Evaluation included: mixed comments on the exercises--some positive and some negative; same with Quizzes; strong, positive support was given for the field trips; major exams were considered too rigorous and "picky;" the term projects generally were seen as exciting and creative with a few exceptions; the grading system was viewed from about right to too rigorous (one said too lenient); TA's were rated weak to slightly helpful; Professor's presentations were rated good with occasional reservations; structure was seen as all right but the quantity of material and work were mentioned here; the low point was often the Primer or the tests; the high point was consistently the Moving Image Unit and material. The open-ended comments were largely positive and constructive in criticism and suggestion.

IV. Conclusions: Self-evaluation and Projected Course Restructuring

My own reaction to the course parallels that of the students, except as noted. While often discouraged with the number of cuts (unlimited allowed) the students took (sometimes as high as 50% of the class) as well as their performance on quizzes and tests (they had not read the material assigned or attended lecture), their exercises and formal projects were exciting and showed talent and creativity. One shift made within the course itself was to allow lots of freedom on the final project. Some did the conventional paper, but others did creative projects, paintings, sculpture, collages, slide tapes, drawings, storyboards and scripts/treatments. I intend to build on this and without dropping all conventional testing go more into projects and creative responses to posed problems.

As to structure, I have decided to shift the Moving Image unit to start the course, moving into the other areas of painting, sculpture, architecture, photography and graphic design to back and expand the desired understanding of the moving image. This also plays my strongest area of expertise against the shaky beginning weeks of the course. In relation to photography I am interested in investigating photo-therapy as a possible inclusion. I focused on this as a result of Don Desfor's presentation in Lexington, Kentucky, at IVLA 13. I also look forward to the sessions on Photo-Therapy planned for IVLA 14 at Vancouver. Robert Muffoletto from the University of Wisconsin-Madison and editor of CAMERA-LUCIDA, has also been a source of interesting insights into photography and visual literacy based on his Lexington IVLA 13 presentation and our continuing correspondence. The book by Robert U. Akert on Photo-Analysis has been ordered for our library collection, but I have not received it yet.

One of my assignments this Fall has been to team teach 17.431/.631, Editing: Film and Audio, with my colleague, Professor Glenn Harnden, senior professor in film production at AU. This is the course that follows the Visual Literacy requirement (Lens and Image: Basic Photography is the other along with Writing for Visual Media). I followed my students into their next course, and that has been most helpful. I can see how the two courses interface with one another. So I plan to relate projects and exercises in Visual Literacy with the Editing course. Skills required in Editing include composition, connecting shots by design, idea generation, visual thinking, storyboarding, pre-production planning and basic image and sound analysis. Students in Editing now see the value of Visual Literacy retroactively; perhaps word will spread! I am also attempting to recruit better teaching assistants for the course. I need to employ them more creatively as well. One or two students will be in Visual Literacy who have already had Editing and will serve as classroom assistants, and one or two transfer students will be taking

Visual Literacy simultaneously with Editing. I'm interested in the evaluative possibilities here as well as the impact (hopefully for the good) that these advanced students may have on the more diversified, less-focused sophomore members of the class.

I intend to use all the books again and invite four to five guest lecturers. Lots of the AV aids will be used again and new ones added. I intend to start the class with some sound to image, image to sound, story to image, writing exercises that were suggested by my colleague, Professor John Douglass. I have also team taught the Writing for Visual Media course he developed this Fall. This is the other required course that follows Visual Literacy.

The use of pictures for the introductory collage fell a bit flat; I was still trying to get the pictures from the half dozen or so shy and uninterested students at midterm. What I am considering is to have each student develop a graphic image, picture, symbol or logo that stands for his or her name/persona and use that in class in some way. I may retain the picture collage as an additional interactive device but make it more optional (or as Douglass says, "Snooze you lose").

I am quite anxious to get the students involved more in discussions and project work groups. I will attempt to use the TA's to organize Wednesday afternoon creative project groups or just feedback sessions on matters of interest or concern to members of the class. I will try to attend as well. An example of this might be a group that would like to work through the Betty Edward's book and present the collected exercise drawings as their final project. (One young woman did this with miraculous effect this year on her own.) Another group of students might want to work together (and with me) on their slide tapes for the final project. We had seven presented last spring. They were of varied quality. My goal is to gently nudge each student into a creative project group where interaction and small group learning can take place.

I will also add "visual thinking" to my stated objective of the course. This is based on my reading Professor John A. Hortin's excellent paper entitled "Visual Literacy and Visual Thinking" (presented at IVLA 12, 1980 at the University of Maryland, available in proceedings of Conference). Professor Hortin is from Kansas State University. I do want my students to be able to "read" visual images, to "write" visual images, but also I want them to think visually and creatively in all areas of visual communication. Because of our heavy emphasis on professional training, part of my definition of visual literacy for my students will always be an awareness of the image and sound as a series of production decisions.

This is where my thinking on the course rests at present. It will be offered again in Spring of 1983, from January 10 to May 9. It will also be offered again this summer in late June and early July, seven weeks in the evenings by my colleague, Professor Bonnie Willette who also manages the AU Media Center. This course will be specifically designed for our students but also transfers and interested persons from the University and D.C. community. Feedback from anyone reading this is always welcome and encouraged.

Abbreviated Syllabus for Course 17.202

Visual Literacy: Learning to See

Course Purpose: To assist students in understanding visual imagery, providing a wide range of experiences so they may learn to "see in a discerning manner." To help students understand that visual literacy is the awareness of the image and sound as a series of production decisions.

Course Outline:

Introduction to Visual Literacy--1 1/2 weeks

Unit I-- The Science of Seeing--the physiology and psychology of vision and perception--1 1/2 weeks.

Unit II-- The Art of Seeing--the fine and graphic arts--a study in class and in the field of painting, sculpture and architecture--2 weeks.

Unit III-- A New Way of Seeing--photography--a study in class and in the field of a revolution in the arts and communication--3 weeks Midterm.

Unit IV-- Reading the Moving Image and Sound--film and video--a study in class and in the field of the most important inventions of the twentieth century--4 weeks.

Unit V-- Seeing the Future--a study of avant garde imagery and technology and its actual and potential effect on society--1 week Final Exam.

Each Unit features at least one outside speaker, a practitioner, an artist, critic or teacher in the field under study.

Course Requirements: 1) Exercises and quizzes as needed to check unit readings, questions and comprehension. 2) Three field work trips in Units II, III, and IV with a check sheet report. 3) Midterm and Final examinations on readings, lectures and presentations (mostly objective). 4) One creative or analytical piece of writing, ten (10) pages in length, clearly demonstrating a master of the basic elements of visual style and literacy.

Relative Weight of Requirements:

1) Quizzes and Exercises	= 10%
2) Mid term exam--1 hour	= 20%
3) Final exam--2 hours	= 40%
4) Field Trips--3 @ 5%	= 15%
5) Ten Page Paper	= 15%

Note: The size and setting and budget for this class require that most of the learning be in large group setting which mandates lecture and presentation as a style. There is still room for interaction, and student involvement in the course is encouraged through questions and conferences either individually or in symposium groups (small groups for field work and issue discussion with Professor and staff and with one another).

17.202 Visual Literacy: Learning to See

Required Texts

Dondis, Donis A. A primer of visual literacy. Cambridge, MA: MIT Press, 1973. 185 pages.
Lowry, Bates. The visual experience: An introduction to art. NY: Harry N. Abrams, Inc.; NJ: Prentice-Hall Inc., undated. 265 pages.
Szarkowski, John. Looking at photographs. NY: Museum of Modern Art, 1973. 216 pages.
Huss, Roy and Norman Silverstein. The film experience: Elements of motion picture art. NY: Dell Publishing Co., 1968. 156 pages.
Berger, John. Ways of seeing. NY: Penguin Books, 1972. 165 pages.

Total pages 987 over 14 weeks = 70 1/2 pages per week.
Cost = $37.65.

Reserved List Reading

Samuels, Mike and Nancy Samuels. Seeing with the mind's eye. NY: Random House, 1975.
Jung, Carl. Man and his symbols. NY: Dell, 1975.
Janson, Horst W. History of art. NJ: Prentice-Hall, 1969.
Arnheim, Rudolf. Art and visual perception. CA: University of California Press, 1974.
Gombrich, Ernst. Art and illusion. NY: Pantheon, 1960.
Panofsky, Erwin. Meaning in the visual arts. NY: Double Day, 1955.
Newhall, Beaumont. The history of photography. NY: New York Graphics Society, 1978.
Szardowski, John. Mirrors and windows. NY: New York Graphics Society.
Arnheim, Rudolf. Film as art. CA: Berkeley, University of California Press, 1957
Monaco, James. How to read a film. NY: Oxford University Press, 1977.
Arlen, Michael. The view from the highway. NY: Farrar, Straus and Girous, 1976.
Curtis, David. Experimental cinema. NY: Universe Books, 1971.
Youngblood, Gene. Expanded cinema. NY: Dutton, 1976.
Williams, Raymond. Television: Technology and cultural form. London, Fortona, 1974.

Evaluation: Evidence of mastery of reading and lectures will be sought in passing grades on quizzes and acceptable accomplishment of the exercises assigned, along with an average of C grades on mid-term and final exams. If the field work is completed and an acceptable (C) paper done, the grade of C will be assigned. Work with some creativity in exercises, a careful, critical response to field work, and averages of B on all tests plus a creative (B) paper will result in the assignment of the grade of B in the course. Excellence of response in exercises, field work (very thoughtful response to this) and an average of A-/B+ on all quizzes and examinations, plus an original and creative paper will result in the grade of A being assigned for the course. Anything less than the above will result in the grades of D or F. Attendance in class is not required, but you are responsible for any work missed. Late work is reduced 1/2 grade for each class day it is late; work is due at 9:55 a.m. on day of class and is late if handed in after late arrival in class. Excused illnesses require a medical note.

A Field work sheet listing museums and field trip possibilities will be handed out at the start of Unit II. Report sheets will be circulated at the same time.

"To see or perish is man's condition . . .
To see more is to become more . . .
Fuller being means closer union."

de Chardin

EYE AND BRAIN: AN EXPLORATION OF HUMAN PERCEPTION

by
MARTIN OUDEJANS
TVOntario
Toronto, Ontario, Canada
and
ROBERT TILROE
TVOntario, Canada
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Rationale

We are witnessing dramatic changes in modes of communication throughout the human community. The printed and verbal channels of communication are being largely replaced or strongly influenced by visual imagery. This shift toward making the visual image the primary mode of information transfer has profound effects on the way people--young and old alike--perceive and relate to their environment.

With rapid technological changes, and the fast development of the electronic communication media, our mental imagery becomes more and more temporal. This rapid change in mental imagery (pictures) makes it increasingly more difficult for people to stay "in tune" with their changing environment. The inability to absorb mental pictures in a meaningful manner divorces people's behaviour from reality. People are in danger of losing their competence in dealing with the new visual reality. This leads to confusion, doubts, a feeling of incompetence, and a loss in self esteem at all levels of society: in the family, the workforce, in politics, and in education.

The development of visual skills will help to reduce these negative consequences. The learning of visual skills also provides new opportunities for cognitive and conceptual development. Experimental educational projects in North America and Australia show a direct link between visual competencies and higher achievements in conventional verbal competencies. This higher potential for intellectual and cultural achievement should not be ignored in our troubled society. Therefore, we propose a television-based educational package focusing on the exploration of human perception.

The Educational Package

It is proposed that 13 half-hour television programs be developed along with a study package including an illustrated viewers guide, a textbook, and an applications guide for secondary school and post-secondary utilization.

"We propose a television-based educational package focusing on the exploration of human perception."

The 13 following units indicate the scope of the proposal. Their content covers many topics, including scientific research by people in several different locations. Specialists should be consulted in order to provide clear, updated and valid information to the viewer. It is for this reason that the 13 TV programs are not as yet fully developed.

1. "Learning to See--Seeing to Learn"
2. "The Working Brain"
3. "Eye, Mind, and the World"
4. "The Thinking Process Revisited"
5. "Creativity: For One or All?"
6. "I Can Draw!"
7. "The Third Eye: Images From Within"
8. "People Watching: Non-Verbal Realities"
9. "Encounters of a Third Kind: Colour and Illusions"
10. "Communications and Information--The Visual Dimensions"
11. "The Unique Reality of Visual Language"
12. "Favorite Choices: Style and Aesthetics"
13. "Extensions: Eye, Brain, and Technology"

Primary Target Audiences

Although the series will appeal to the general television viewer, it should be of particular interest to the following audience groupings:

- Teachers who are experiencing the consequences of the changes in the perceptual abilities of present day students. Particularly interested are the art education teachers and many elementary teachers.
- People, including media coordinators and learning resources educators, who are involved in the design and production of learning systems.
- Students who are involved in any of the visual arts desciplines.
- People who are professionally involved in the production or in the designing of information systems and information services.
- Visual arts educators working outside formal school systems.

Secondary Target Audiences

- Adults interested in any of the visual arts as a hobby, as amateur photographers, as painters, librarians, and public relations officers.
- Concerned parents who want to assist their children through the labyrinth of visual deceptions and temptations.
- General viewers.

The Television Component

Program Structure

The proposed television series will provide not only an introduction to the concepts of human perception but will also create an awareness and insight into the implications and applications of these concepts.

The project will explore how, through the senses, we come in contact with the world, a confusing world which we order through our senses. The senses abstract structures of objects and events and store them in the brain as "concrete" or "abstract" ideas, ideas with which we think. Therefore, perception is the basis of all mental activities.

The understanding of human perception and the acquisition of the visual skills encompasses a great many disciplines. The major contributing areas of study will be explored in a sequential manner. This sequential approach is necessary to give the viewers a clear understanding of the complex perceptual process.

The series will be designed in line with the threefold purpose of all communication: to inform, to persuade, and last but not least, to entertain. For many units a more instructional approach will be used, due to the content of these units. Some units will require a more descriptive format such as the unit discussing Style and Aesthetics.

Learning Outcomes

The project, as proposed, would be designed to assist learners in achieving outcomes such as the following:

1. Increased awareness of:
    - the need for developing visual languaging skills
    - the influence of place, time, education, and culture on human perception
    - the nature of contemporary research which is expanding our knowledge of the function of visual activity of a working brain

- holistic considerations related to human perception
- how visual languaging is or is not taught through formal schooling
- benefits of visual literacy
- personal and social attitudes held toward the value of visual communication

2. Increased knowledge of:

- how the human brain receives and modifies information taken in through the senses
- current theories related to thinking, imaging, and creative problem solving
- the influence of colour on human behaviour
- research on visualization
- colour organization and harmony
- colour used in symbolic communications
- factors which contribute to the appeal of visual media
- approaches being taken to foster pre-social critical television viewing
- the influence of the process of perception on the appreciation and creation of images
- neurolinguistic programming and non-verbal communication

3. Increased comprehension of:

- relationships between the form and content of a picture
- distinctions between representational, symbolic, and abstract images
- style as an indicator and reflector of social philosophies and attitudes
- visual techniques available for improving communications
    - the use of drawing as a tool for increasing observational skills
    - the use of colour
    - the use of relaxation

Specific learning objectives will be identified for each unit and for each of the system components. Careful consideration will be given to make sure that the most appropriate component(s) of the learning system is used to facilitate achievement of specific learning objectives. It is hoped that this proposal will call attention to the need for development of visual skills and will lead toward the production of a comprehensive educational package exploring human perception.

INTEGRATION OF THE IMAGE AND THE WORD

by

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In the present atmosphere that dictates a back-to-basics movement, any attempt to present a film literacy course appears out of step with reality. However, there are a number of pressing reasons to argue that visual literacy is a basic skill needed by all students and is every bit as vital as reading, writing, math and computer skills. For unless we seek to analyze the broader implications and power of persuasion available to the visual medium, we will forever be victims of, or manipulated by, that medium. Thus, it is imperative that students be aware of the scope and the power of that medium. It is with that philosophy in mind that our curriculum was conceived and implemented.

"It is vital that the students be able to identify and employ the elements of the visual world."

One of our objectives is to have the students become more aware that all language is a mass medium and that anyone involved in a visual literacy course must use all the tools of the language. Further, we want students to understand that the language of film is composed of and dependent upon the more familiar oral and written forms. First comes the idea--then comes a story--then comes a script--and only then comes a film. Beyond that, discovering the underlying components of film helps sharpen students' powers of observation, makes them more knowledgeable about organizational patterns and gives them a slightly different approach to composition.

Actually, the course is highly structured and supports and extends the English curriculum and utilizes a multi-discipline approach with both media and English teachers involved in all phases of the program. In a cooperative venture teachers from both disciplines enter into a three-part program with ninth and tenth grade honor sections. The emphasis in the ninth grade is on visual literacy and introductory film-making while the tenth grade focuses on continuing skills mastered the previous year. Both sections interrelate English skills outlined in the county curriculum guides in every stage of the program. These curriculum guides require that a student will develop proficiency in three basic English areas: reading, speaking, and writing. Consequently, the visual literacy unit can be seen as a synthesis project whereby the student utilizes all aspects of language to develop a unique and creative product. In the interest of clarity and specificity, this paper will focus on the ninth grade program.

The first part of the ninth-grade program allots ten class days to guide the students through an introductory media program. During this phase, the emphasis is on defining and acquiring visual literacy. Our first step examines the creative process itself, and the film "Why Man Creates" offers not only a thoughtful explanation of the process but allows students to vent some of their frustrations. When students are asked to respond to the phrase used in the film that "creativity is 10% inspiration and 90% perspiration" there is almost always clear-cut agreement with that viewpoint. There is also a kind of happy relief when students realize that creativity isn't always universally applauded, nor is it a process that occurs solely in remote corners of the world.

As part of this first phase, one full day and several homework assignments are devoted to the introduction of the visual elements. It is vital that the students be able to identify and employ the elements of the visual world. With the use of the program "Learning to See and Understand: Developing Visual Literacy" (The Center for Humanities, 1973), and a general discussion of line, color, shape, texture, lighting and movement, students are able to understand that the visual world has not only shape and form, but that these shapes and forms can be manipulated for any number of purposes, some good and some bad.

One major homework assignment encourages the students to explore more fully the elements of visual literacy by creating a collage using one of the elements listed above. Another assignment suggests the use of an emotion such as happiness, love, sorrow, or even thoughtfulness as the subject of a collage. And, still another homework assignment asks the students to explain "point of view" by making a collection of comic strips from the daily newspaper or from old comic books. The students are instructed to cut apart ten to fifteen "frames" and categorize them according to point of view. They are to note angles, distance from the subject, and are to discuss whether the viewer is "seeing" through the eyes of another character. Finally, the students are asked to ponder why the artist had decided upon the particular point of view in each frame.

". . . we hope to challenge the prevalent idea that when someone watches a film, they do not have to think at all."

On the third and fourth days of the first phase we stress observation, interpretation, and divergent thinking. With this step, we hope to challenge the prevalent idea that when someone watches a film, they do not have to think at all. Further, we believe that as students acquire visual literacy, they will also become more discriminating and thus less likely to be manipulated by the visual medium. One of the films in particular, Dream of the Wild Horses provokes quite a discussion over possible themes. Initially, the students want just one explanation for the film, but gradually come to the realization that people can view a film on several levels and that the more numerous the interpretations probably the better the film. Actually, we call this section of the course a "film blitz," because we show three or four extremely short films on one day, and we show some of the films more than once. With Dream of the Wild Horses we first have a silent showing, and then, only after the students propose an explanation do we have another showing, this time with sound. We ask the students to complete a chart listing setting, plot, characters. They must also include the introduction and resolution of conflicts. These charts not only serve as an aid to interpretation of films, but also help illustrate the major idea that films, novels, plays and short stories all share similar features. We further require that the students take notes on all the films with special emphasis on setting and plot to determine theme. Since we show most of the films several times, students are able to simply absorb and enjoy the film before it becomes necessary to take notes. It is at this point that we ask students to identify sensory details and other techniques used by the filmmakers as they consider how these details and techniques are manipulated to achieve visual effect.

Day five is utilized to draw the connection between the sequence of a film and the sequence of a sentence or a paragraph. With the use of the Kodak film Rhetoric of the Movie we examine the link between visual literacy and verbal literacy. Students are asked to think in terms of the parts of a sentence. When, for example, a close-up shows the face of a girl, students immediately and correctly identify her as the subject. When a bat and ball appear in the next shot, students have little difficulty in identifying verb and object. Still later they are able to see that a single shot can be a visual sentence. This particular series is excellent for reinforcing the concept of point of view and logical sequence. It also makes the point that viewers must be alert or be vulnerable. For example, two shots show a pitcher whose cap reverses itself from one shot to the next even though the action is supposed to be continuous. We showed this sequence to one group of students three times and they were not able to catch the error in sequence. However, the connection between the visual and the verbal is exceedingly clear after this step in the unit.

"... one of our stated objectives is to draw the connection between the visual and the verbal at all stages."

Since one of our stated objectives is to draw the connection between the visual and the verbal at all stages, we ask the students to write a paper defining the term "rhetoric" using examples, synonyms, historical meaning or general class. One of our students places "rhetoric" in the class of art, while another believes that a synonym for the term would be "effective communication or the art of being able to communicate with society effectively using a number of different media." Another student believes that the term means using "imagery to make a picture clearer," or "using figures of speech to make an idea more interesting." This student makes the point in her essay that "rhetoric" is used to influence or persuade, even manipulate. Clearly the message we are trying to communicate is taking hold. Even though rhetoric is almost always associated with words it certainly has applicability to the visual world as well.

Instruction about use of the camera is crucial at this stage. Actually the instruction starts at a very elementary level with a discussion of the parts of the camera. Even though most students are familiar with the viewfinder, they need an explanation of the aperture reading, the zoom lens and the importance of correct focus. Instruction in loading the film and mounting on the tripod completes the first introduction to the intricacies of the camera.

Since both students and teachers are always anxious to have a "hands on" experiment, and the teachers are anxious to back up and reinforce the visual elements, we combine the two and experiment with manipulating one of the visual elements. Two days are reserved for this very important part of the program. Students are asked to work in pairs to create a fifteen-second script that will illustrate a specific action using one of the visual elements. The suggestions range from illustrating irritating behavior such as combing hair over food, putting feet on a table, slurping through a straw, or popping bubble gum; to sectioning a grapefruit, cutting an onion, arranging flowers, or kicking a football. After they write the script, we require that they convert it into either a thematic or narrative storyboard. We make a clear distinction between these two and explain that a thematic storyboard takes a particular idea and develops a visual expression of it. We use the example of the irritating behavior suggested above. On the other hand, a narrative storyboard uses a sequential account of how an event came about or how a movement through space occurred, and we use the example of kicking a football. One of the pairs chose cutting an onion for their fifteen-second movie. This proved to be an excellent choice because the action had the added dramatic effect of a good many tears.

While we wait for the above film sequence to be developed, the students work for several days with the English teacher through a series of creative writing exercises designed to favor development of creativity. Developing flexibility, fluency and originality becomes our primary focus at this point. Students see films created by a previous class and are able to read the scripts so that they have some idea of integrating the image and the word. Exercises include a free-wheeling brainstorming session and ten minute free writing exercises; they culminate with students writing a short story utilizing a third-person omniscient point of view. These creative writing sessions close the first portion of our unit.

In the second phase of the program, students are separated into four groups and enter a four day rotation. Three of these groups remain with the English teacher and rotate every fifth day through composition, reading comprehension and drama/poetry exercises. One of the groups works with the media specialist in producing a project design for a film. The first order of business for the project design group includes reading the story produced during the creative writing session. Each student reads his script to the group and one story is chosen from each group as the basis for a film. The project design section of the unit not only produces a script and a storyboard, but also includes a description of job assignments, estimates of time involved for each job, and a description of the visuals needed for the project.

After all four of the groups have rotated through each of these assignments, the students return to the regular English classroom and the more expected English curriculum. One month separates the project design phase of the program from the filming. The students actually need that much time to prepare visuals, because preparation of the visuals is considered a homework assignment.

The actual filming--part three of our program--finds the students separated into four groups once again. While one group works with the media specialist in actually filming the story, the other groups work with the English teacher in another rotation. This time one group works on multi-paragraph compositions, while another studies a major play with the aid of tapes, and still another studies the ballad and sonnet as a specific form. Aproximately ten class days per rotation, or a total of forty days, are devoted to this portion of the unit. Students splice and edit their film as an after-school activity. One of the final activities of the film study unit is a film festival in which students view all of the films produced and use a standardized critique sheet to evaluate them.

While the program as outlined in this paper has emphasized the ninth-grade program, a similar schedule is followed in the tenth-grade honors section. The focus in the tenth grade is on refining previously acquired media production skills and examining more sophisticated manipulative devices. At all times these skills are related to specific goals outlined in the curriculum guide. The students in the higher grade are required to write, produce and edit a film that evokes a specific mood, illustrates a particular point of view, explores bias, examines characterization through stream-of-consciousness, or illustrates a theme through symbols.

At all points in the program, it has been our objective to encourage students to expand their horizons and to think beyond the expected. Although currently this program is designed for gifted students, it can be adapted for students at all levels and probably should be. Our goal has been to aid students in manipulating oral, visual, and written words so that they add to this world and define it in visual terms, thus expanding and enhancing perception. If the instructors are successful in teaching, and the students are successful in learning, then students will be able to integrate the image and the word, and, by combining words and images, produce compositions that are more than simply words on a sheet of paper. This approach truly adds another dimension not just to their stories but to the students' thinking as well.

Howard Suber, a teacher in the Motion Picture/Television Division at UCLA, sums up our belief that words are the important ingredient in the visual world. Those critics who insist that film or television study be relegated to the fluff pile, or if studied at all be studied as an elective, miss a major point. It is our contention, as voiced by Mr. Suber, that film "begins in words and ends in images." Perhaps, most importantly, "without the word there is no beginning."

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EXPLORING A SCHOOL:
A VISUAL ADVENTURE

by
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Rationale

A visual/verbal curriculum is the foundation for integrated learning. Its goal is true literacy--creating meaning from sensed stimuli.

Children live in a lively visual world. Most children enter school with a vocabulary of about 2500 spoken words and an even larger visual vocabulary. This year-long project is an effort to capitalize on this tremendous store of knowledge by meshing visual and verbal discrimination and conceptualization.

Because many students leave a school knowing very little about it, we chose exploration as the year's theme. This includes the classroom and everything in it, the entire campus, and the immediate neighborhood. It also includes meeting the adults who work at the school, parent and neighbor volunteers, and the middle school "tutors" from an adjacent campus. We believe that this initial experience of knowing their school may begin an appreciation of public education as a unique and essential institution.

The Children

Students who attend La Merced Elementary School live in Montebello, California, a city of 55,000 adjacent to East Los Angeles. Busing is provided for several children who live more than three-fourths of a mile from school.

One indication of the economic range of the families is housing, which ranges from small apartments renting for about $350 a month to houses costing $250,000 and up.

The school is one of seventeen K-4 schools in a large unified district which has a total Spanish surname enrollment of 78 per cent.

Cultural backgrounds of children in this kindergarten include:

15	Mexican	2	Filipino	1	Jewish
3	Chinese	2	Anglo	1	Armenian
3	Japanese	2	Gypsy	1	Russian

Four of the children entered school in September speaking limited English and only their first language at home. Five English-speaking students came with seriously limited language skills.

Teacher's Point of View

1. Visual/verbal literacy creates and enhances self-esteem.
2. Each child has a "smart brain" and deserves as many positive experiences as possible. Small failures become part of the positive experiences as a child learns by taking physical and intellectual risks.
3. The "outdoor classroom" builds sequenced skills without competition.
4. Cooking and eating many kinds of food integrates the entire curriculum. It is one more strong link between school and home as recipes go back and forth.
5. An open classroom must be open not only for the children but for the important people in their lives and to visitors of all ages.

The First Two Months

On the first day of school small groups of children and accompanying adults were scheduled to come to the classroom. The teacher chatted with the adults as the children explored the room and posed for snapshots taken by a volunteer. The next day they drew self-portraits and both pictures were displayed. Soon these were made into a large book along with stories (dictated) about themselves.

This speeded the process of learning names and after a week each child knew most of the names and there were some signs of group awareness. Now it was time to introduce a new tool--a camera. The teacher opened it and sent it around the circle. They handled it very carefully and were delighted with what they saw through the view finder:

"Why does that boy look so little?"

"I can see the whole ceiling!"

"Hey teacher, you look little, too?"

"I can't shut just one eye--show me how."

"My mom takes all the pictures. Do I get to take some?"

In later conversations we learned that there were one or two cameras in every home but that only two of the children had ever been allowed to take a picture. Some explanations were positive (Mom and Dad want to take me all the time) while others were vague (I'm not supposed to touch it).

The next day the camera was examined again, along with a roll of film. For the first slides the "early birds" (who come an hour before the entire class assembles) chose to stay in the room and the "late birds" elected to go to the play yard.

Half of the indoor shots were doors and windows: only two had people in them. Almost all of the outdoor pictures were of playground equipment. The exception was the principal's yellow sports car.

The animated conversation as the children viewed the slides was exciting. They had no interest in the quality of the pictures, only the content. It was difficult for us to keep from suggesting ways to improve, but we almost succeeded and were rewarded with lively descriptions and questions. There was also good-natured laughter as, for example, when Katie's head was missing.

Early in the year the children had counted the doors in the classroom, and small groups went with one of us to the teacher's work space--sink, drawers, cupboards, refrigerator. They guessed what was in the cupboard and when the doors were opened they examined the contents with keen interest. We also learned more about their language. For instance, all knew what an electric blender does, but none had a name for it. And a glass vase was called crystal but no one said vase.

A walk around the periphery of the campus was a fine adventure which the children recalled in detail even a week later. At this school a separate building houses three kindergarten classrooms, and the large play yard faces the street, not the rest of the campus. The children go to the cafeteria but ordinarily do not see anything else.

The most fascinating discovery was the swale which is part of the drainage system. The next day they returned to examine and photograph the large pipes. They also discovered manholes and later made rubbings of some of them.

With volunteers and tutors, it is possible for small groups to go exploring. Five children went out to photograph what was behind some doors and enjoyed the anticipation of the adult unlocking them and guessing what might be inside to see and photograph. They discovered the huge water heater in the cafeteria and the stoves in the kitchen. They went into the "big" boys' and girls' restrooms, the custodian's work room, the supply room off of the office, and the book storage room. They used an instant camera and all watched as a picture came to life. Talking was constant.

On October 25 the camera started to go home with a child; eventually all will have this experience and already their reports and the questions of the other children are indicating that verbal/visual discrimination is growing. They take longer to plan their two shots at home and talk and question more.

Cameras are not all of this curriculum of creating meaning from sensed stimuli. The roots of the jicama are observed as they grow to almost two feet in the air. A goldfish has joined the little frog in the aquarium. The cockateel is lovingly fed and watched. Drawings of their house are displayed with a number line of the windows in each (a "homework assignment"). A large print of Van Gogh's bedroom at Arles will lead to drawings of rooms where the children sleep. Leaves, plants, and trees on the campus are to be investigated. There will be visits to the office, cafeteria, kitchen, and several classrooms as well as a journey to the middle school. Cars in the teachers' parking lot will be examined for close-up photographs. Happenings will be recorded in the daily newsletter, charts, stories, by tape recorder and videotape. There will be a train trip and walks to the churches in the neighborhood. The children themselves will suggest experiences which combine observation with talking and recording.

We will continue to explore curriculum which frees each child to grow in self-esteem. Such a curriculum capitalizes on Piaget's notion of egocentricity and Havighurst's theory of developmental tasks. It is an exciting venture.

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LONELINESS IN THE PRE-TEENS: A SOCIAL COMMENT

by
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The following paper is intended to serve as an overview of classroom applications in the area of visual literacy taking place at Northridge Elementary School in Victoria. It is a record of the philosophy of a school and steps that were taken to help achieve that philosophy.

Basically our concern was that children (and adults) only achieve a small percentage of what they might have learned. Perhaps this is because, as George Leonard (1968) says, in *Education and Ecstasy*, "the vast preponderance of people have been required to learn, in addition to the tricks of their trade, only the body of knowledge and the way of knowing of their particular society, *and no more*." (p.78)

Couple this concern with the belief that every child is gifted in some way, and you have the beginnings of a need to include visual literacy in the curriculum.

The problem was, how to define visual literacy.

John Debes (1978) believes that a visually literate person can "read" visuals with skill, and is able to "write" eloquently, using visual language. By this definition, would a person who responds to subliminal advertising be skillful or would it be the person who "made" the advertisement? And what *are* visuals? Pictures on a page? Media such as television? What can be produced with a camera? Graphics on a computer? A picture that is seen within the mind? If a person "reads" a visual and the interpretation is different from that of someone else, who is the one that "reads" with skill? What should be the *content* of a visual literacy program?

We were convinced, from a study of recent brain research, that visual literacy can be achieved through encouraging right-brain functions. An over-simplification of recent findings tells us that the right side of the brain controls the ability to comprehend visuals, and that at least one-third of the entire population of the world may be right-brain dominant. Schools, we now know, traditionally teach to the left side of the brain, which specializes in highly structured, linear-type stimuli.

As Marilyn Ferguson (1980) has said, in *The Aquarian Conspiracy*, "Every break-through, every leap forward in history, has depended on right-brain insights, the ability of the holistic brain to detect anomalies, process novelty, perceive relationships. Is it any wonder that our educational approach, with its emphasis on linear, left-brain processes, has failed to keep pace with the times?"

Novelist Jill Robinson, writing in a popular magazine (House and Garden, Aug. 1980). indirectly supports this view. She says, "My life feeds into my work, because I'm always close to reveries and visions when I see an inspiring object. They are my totems, my artifacts from the land of imagination . . . I read objects the way others read books. The way you get stories and impressions and feelings from an object is very similar to the way you get them from words on a page. It really is a process of learning and you catch the images out of memories and associations."

Since children today are more exposed to visual stimuli in terms of television-watching, computer games and film, it makes sense to suggest that, just as they learn to walk with very little intervention from adults, they may also be learning visual literacy in the same way. We cannot debate whether this is good or bad, in terms of what they are watching, or even if a school should intervene. There are certain inherent value issues that perhaps may be more a matter for parents to consider.

Our final decision was that a definition was impossible! Our aim therefore should be to complement the traditional programs dependent on the symbols of written language as a vehicle for literacy with a school program that used any or all of the visual literacy modes. The nature and purpose of the program, co-ordinated by the Gifted, Talented and Creative teacher through Kindergarten to Year Seven is explained in the following pages.

G.T.C. Program at Northridge

Background

Northridge School initiated an enrichment program for all students in 1977. Provisions were made by classroom teachers within their own classes using learning centers.

In January 1981, the Victoria Board of School Trustees approved the directions outlined by the Instruction-Curriculum Department for a Gifted/Talented/Creative Program. The Board is now providing the necessary support funding and staff resources to ensure the implementation of G.T.C. services for students in the district at the elementary and secondary level.

Northridge has been assigned a (.5) teacher (half-time) to co-ordinate G.T.C. services and enrichment.

Three Dimensions of the G.T.C. Program at Northridge

1. All students will have access to enrichment. The implication is not that the G.T.C. teacher is the single provider of enrichment. The G.T.C. teacher will co-ordinate efforts. Combinations of these activities can be used to meet this end:

    - Our enrichment library will be expanded and maintained.

- The G.T.C. teacher will be active in obtaining enrichment units for centers.

- School-wide themes can be developed to include all students: Yearbook, ethnic studies, time capsule, etc.

- Lessons to whole classes can be provided.

2. On-going attempts to identify gifted students will be made. Once identified, these students will receive on-going programming, the programming being overseen by the G.T.C. teacher. Combinations of these activities can be used to meet this end:

    - Pull-out activities can be offered: gifted curriculum.

    - Gifted students may participate in enrichment pull-outs.

    - Mini-I E.P.'s (individual educational plans) can be arranged for classroom use.

    - Mentors can be provided.

    - Buddy-tutors can be arranged.

3. Enrichment programming is available to identified students. These students would not necessarily be gifted students but rather students with gifts or talents. These classes might be more content oriented. Some students might be enrolled on the basis of high interest. Classes will be of pull-out nature and short term.

    The G.T.C. teacher will co-ordinate all of the above and will serve on the District Committee of G.T.C. teachers.

Defining Giftedness

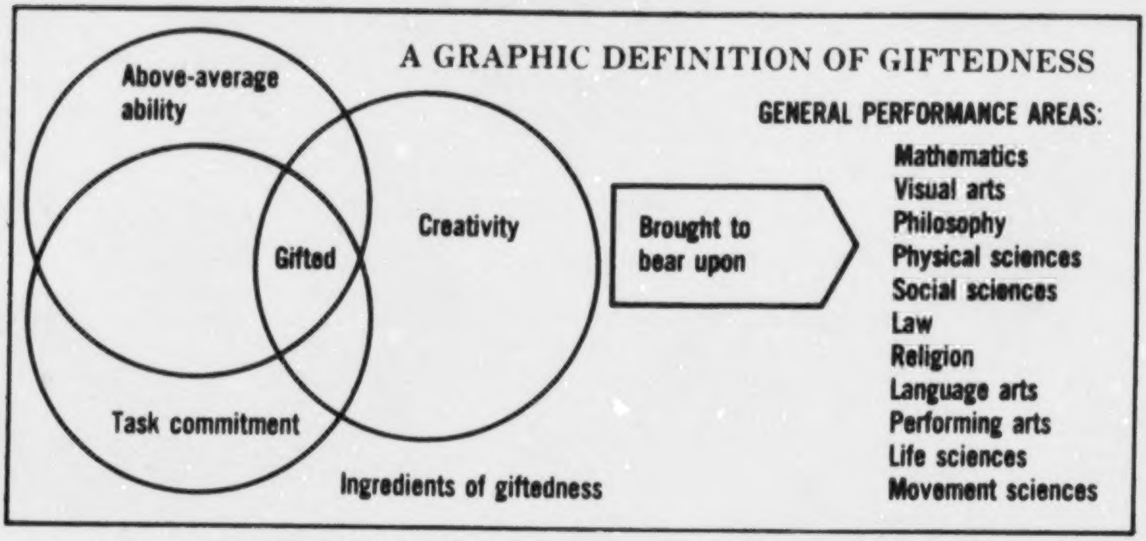
Perhaps the most inclusive definition of all is that proposed by Joseph Renzulli who sees GIFTEDNESS as consisting of an interaction among three basic clusters of human traits. These clusters are:

1. Above average abilities.

2. High levels of task commitment.

3. High levels of creativity.

Gifted children are those possessing or capable of developing this composite set of traits and applying them to any potentially valuable area of human performance. He feels that these children require a wide variety of educational opportunities and services that are not ordinarily provided through regular instructional programs. All three are components of giftedness, and the higher the degree of overlap, the more fulfilled the child will be.


A GRAPHIC DEFINITION OF GIFTEDNESS

Above-average ability
Creativity
Gifted
Task commitment
Ingredients of giftedness
Brought to bear upon
GENERAL PERFORMANCE AREAS:
Mathematics
Visual arts
Philosophy
Physical sciences
Social sciences
Law
Religion
Language arts
Performing arts
Life sciences
Movement sciences

However, the "gifted" child, because of his or her uniqueness, is often a victim of loneliness. The following poem written by an eleven year old British Columbian student was published in the Fall 1981 newsletter of The Association of Educators of Gifted, Talented and Creative Children in B.C.

They laughed at me and called me names,
They wouldn't let me join their games,
I couldn't understand.
I spent most playtimes on my own,
Everywhere I was alone,
I couldn't understand.
Teachers told me I was rude,
Bumptious, overbearing, shrewd,
Some of the things they said were crude,
I couldn't understand.
And so I built myself a wall,
Strong and solid, 10 foot tall,
With bricks you couldn't see at all,
So I could understand.
And then came Sir,
A jovial, beaming, kindly man,
Saw through my wall and took my hand
And the bricks came tumbling down
For HE could understand.
And now I laugh with them,
Not in any unkind way.
For they have yet to face their day
And the lessons I have learned.
For the eagles soar above all birds
And scavengers need to hunt in herds
But the lion walks alone,
And now I understand.

Traditionally schools emphasize written expression. Basically curriculum deals with content--what we are to learn, process--how we learn, and product--how we reconceptualize what we have learned. It seems particularly opportune both economically and by class-size to provide gifted students with maximum exposure to product proto-types.

This paper, "Loneliness in the Pre-Teens," is an illustration of how we might, through visual literacy, help the children express what they feel. Perhaps through a world that is not dependent on the symbols of written language, the alienative effects of our culture can be counteracted.

Through audio-visual means it can be demonstrated that children do have sensitivities to social issues and can express them at a sophisticated level. Many children are not conscious of their feelings. Others are incapable of writing social comment or even verbally expressing ideas on social issues.

Our paper is three-fold:

1. Seeing ourselves personally.
2. Seeing our environment.
3. Seeing ourselves through time.

Visual material has been collected over a period of years from students in regular classrooms, art classes and more recently from Northridge's Gifted Program. The paper is not of a technical nature but rather one of the development of creative expressions through photographic and artistic skills.

Visuals that were presented at the International Association for Visual Literacy Conference included:

* an art-photography display
* a slide-tape presentation
* video tapes

Students participated both actively and reactively throughout the program:

* Actively--producing a visual
* Reactively--combining visuals or by creative writing

Seeing Ourselves

Before one can effectively and comfortably deal with others, he or she must understand human needs, feelings and relationships. Program development included verbal and non-verbal communications skill-building. Students produced a number of slides and photographs of subjects which appealed to the class, and students reacted, some in the form of creative writing and others sequencing or juxtapositioning slides to tell a visual story. In other instances, students wrote and then photographed appropriate illustrations to their work.

I found these excellent sources for curriculum development:

1. The Nelson Language Stimulus Series
Thomas Nelson and Sons
81 Curfew Dr.
Don Mills, Ontario.

This series has excellent photographic material. It led into a photo-criticism unit and also provided good visual material to think about, talk about and write about.

2. Making It Strange
Synectics Inc.
Harper and Row Pub.

This series deals with analogies and metaphoric relationships which were used at first in Creative Writing Classes and later transferred to visual literacy classes.

The following description of "Synectics" is taken from Program Components--Resource Book for Teachers of G.T.C. Students, Archambouet, M.; Bailey, D.; Cherrington, J.; Knowles, D.; Victoria School Board, 1981.

Synectics

Synectics is a group creative problem solving technique which was developed by William G. Gordon. Gordon's goals for students using this approach are:

- to learn one thing in terms of another
- to recognize relationships between a wide range of facts and feelings
- to understand new concepts by consciously making connections to what they already know
- to learn the skill of seeing familiar things in a new way
- to learn to think creatively and use this creative thinking in various aspects of life

The process of synectics extracts similar characteristics from familiar objects and applies these abstractions to new and unique situations. These abstractions are essentially metaphors which can be applied to new analogies; or as Gordon states, "Learning is making new connections."

The steps in group synectics are:

- state the problem and the specifications
- brainstorm solutions
- focus on only one element of the problem and draw out the metaphoric characteristics

- search for strange and new analogies
- concentrate on the analogies and their characteristics, list everything possible about them
- force the analogies upon the problem
- develop a solution which meets the specifications of the problem

Example

What ideas can you get from coverings on animals to develop a new type of roof which insulates for all types of weather?

The skills illustrated by this program were adapted for use within our visual literacy program.

Our visual literacy program also has A FOCUS ON THE AFFECTIVE DOMAIN as described also in Program Components.

Emphasis on the affective domain is essential because the gifted child is unusually capable of understanding relationships including the delicate connections between knowledge, feelings and behaviours.

We try to help the student:

- accept his/her humanness--strengths, weaknesses, needs, desires
- evaluate his/her talents in terms of his/her own satisfactions and the use of such talents in the future
- be in touch with qualities such as: open-mindedness, tolerance, flexibility, discrimination and non-materialistic growth
- approach the world of relationships through self-awareness, research, observation, experiences
- be comfortable with being sensitive, aware, perceptive
- apply his/her talents to his/her own well-being--ability to objectify, philosophize, share, create, appreciate
- understand that self-awareness can be deftly fanned into an awareness of others, class, school, society and the contemporary issues of life

Some examples of work produced using these materials are:

Loneliness

Loneliness follows me wherever I may go
Here, there and everywhere but
Nobody but I shall know.
It is silent as I walk
For I feel like the dead.
A breath of fresh air
Temporarily
Sweeps the loneliness away
But before I know it . . .
It will be back again . . .
Today.
My word is spoken
But nobody hears.
My game is won
And nobody cares.
I will often ponder about my life
For I can see
In a sense I am not alone
Because
Loneliness is my company.
Loneliness.

Girl 11

Loneliness

Loneliness
Cold, empty
Slumped, pondering, staring,
Isolation, silence, stillness, sinking
Solitary.

Boy 11

Seeing Our Environment

Students visited a number of sites to photograph social statements. Slides were taken in wrecked car lots, cemeteries, parks, playgrounds, forests, etc. Results culminated in a multi-media collection of statements about aging, danger, waste, personal interactions, drunken driving and so on.

This example of poetry resulted from a reaction to visuals of the Longbeach area.

On the Way to Longbeach

Trees where trees should never grow
Thin black poles against the snow

Huge black boulders . . . on each snow lies
Towering up towards grey skies.

White against black, black against white
Thin mist shrouds the unearthly sight
Rushing water in the valley below
Fast as an avalanche, cold as snow

Ominous, menacing mountains
Surrounding, enclosing, advancing
Banning life--especially man's.

Seething, writhing cataracts fall
From the stately black mountains standing tall.

Bleak and desolate the mountains lie
Alone while around them the world rushes by.

Grade 7 Girl

Reaction to visuals of our school playground resulted in this poem.

The Playground

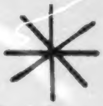
What makes a playground?
Laughing
Crying
Games and tears
Kids calling other kids names
Soccer, football, tag
Boy with a lunch bag
Fighting
Screaming
Hating and befriending
Friendships never ending
Girls picking up daisies and
threading the ends
Things being lost and things
being found--
That is what makes a playground.

Girl 10

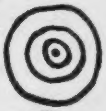
Students also studied the mandala. Mandala is a Sanskrit word meaning Magic Circle. Its basic components are geometric shapes in perfect symmetry or balance. These center patterns are designs which move from the center of a circle to the outside edge. The study of center patterns has been of interest to mankind for centuries. There are metaphysical implications: A flower opens from budshape to full circle, humans develop from prenatal position to a more open form. The universe is concentric rings. Children learn to draw human form as a circle with spokes. Psychology of human development deals with nuclear families. There are many implications in terms of philosophy.

There are three formal variations of the mandala pattern.

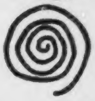
Radiating



Concentric



Spiral



In nature: flowers, spiderwebs, frost on window, ripples from a stone hitting water, seedcones, eyes, leaves, eyes on a peacock's tail, seed clusters, starfish, sand dollars, sea urchins, jelly fish, birdnests, mushrooms, cross-sections of fruits and vegetables, rocks, woods, microscopic forms.

Man-made: lacework, doilies, church rose windows, kaleidoscopes, springs, umbrellas, basketwork, cracked and shattered glass, exploding fireworks, fountain.

The primary children began by creating center patterns on the floor with real objects--balls, umbrellas, boots, hoops. Children drew and photographed center patterns. Sidetrips were taken into china painting, crocheting, basketry, medallions, dance and water ballet routines. The emphasis on center pattern study was on increasing artistic awareness and technical skills. Implications of the philosophy that man as the center of the universe were discussed.

Some examples of visual literacy using the mandala.

Rain

Beads of rain bounce off the sidewalk
Reflecting little suns or moons
If it weren't for rain
We wouldn't have rainbows
or green grass or fun splashing
in puddles.

Girl age 7

Mushrooms

Umbrellas for fairies
Nestled in beds of autumn leaves
Soft and fragile
Joggers pulse along the trail
And unknowingly destroy them.

Girl 9

Snowfeathers

Snowfeathers
Snowfeathers
are falling
floating down

They are
pretty
cold
white
lacey
feathery
I like to see snow feathers in the air
When snow feathers touch the ground
They are just snow.

Girl 7

Through Time

Students examined "Ourselves Through Time." They produced a school yearbook of photography and creative writing. This was a mammoth undertaking but very worthwhile in terms of visual literacy.

John E. Arnold's "Useful Creative Techniques" suggests how to stimulate brainstorming. In terms of visual literacy, we looked at each potential photograph and thought about:

other uses--are there any other uses this might have?
adaptation--what else is this photographic subject like?
modification--what new twist can be made?
magnification--can we elaborate on the picture?
minification--can we eradicate part of the picture?
substitution--can we use something else instead of part of the subject or place?
rearrangement--can we interchange parts?
reversibility--can we combine parts of photographs or slides?
transformation--can we change its form in any way?

In evaluating the above program it became obvious that there is a continuing need to include and expand the role of visual literacy in the elementary school curriculum.

The major benefits appeared to be an increased self-awareness in the child, and an increased ability to observe and comment on the social issues present in our society. Through the process of picture taking (slides, video-tapes, photographs) verbal and written expressive language increased in power.

In our school, visual literacy is here to stay.

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Ferguson, Marilyn. The aquarian conspiracy, Los Angeles: J.P. Archer, Inc., 1980.

EDITORS' NOTE:

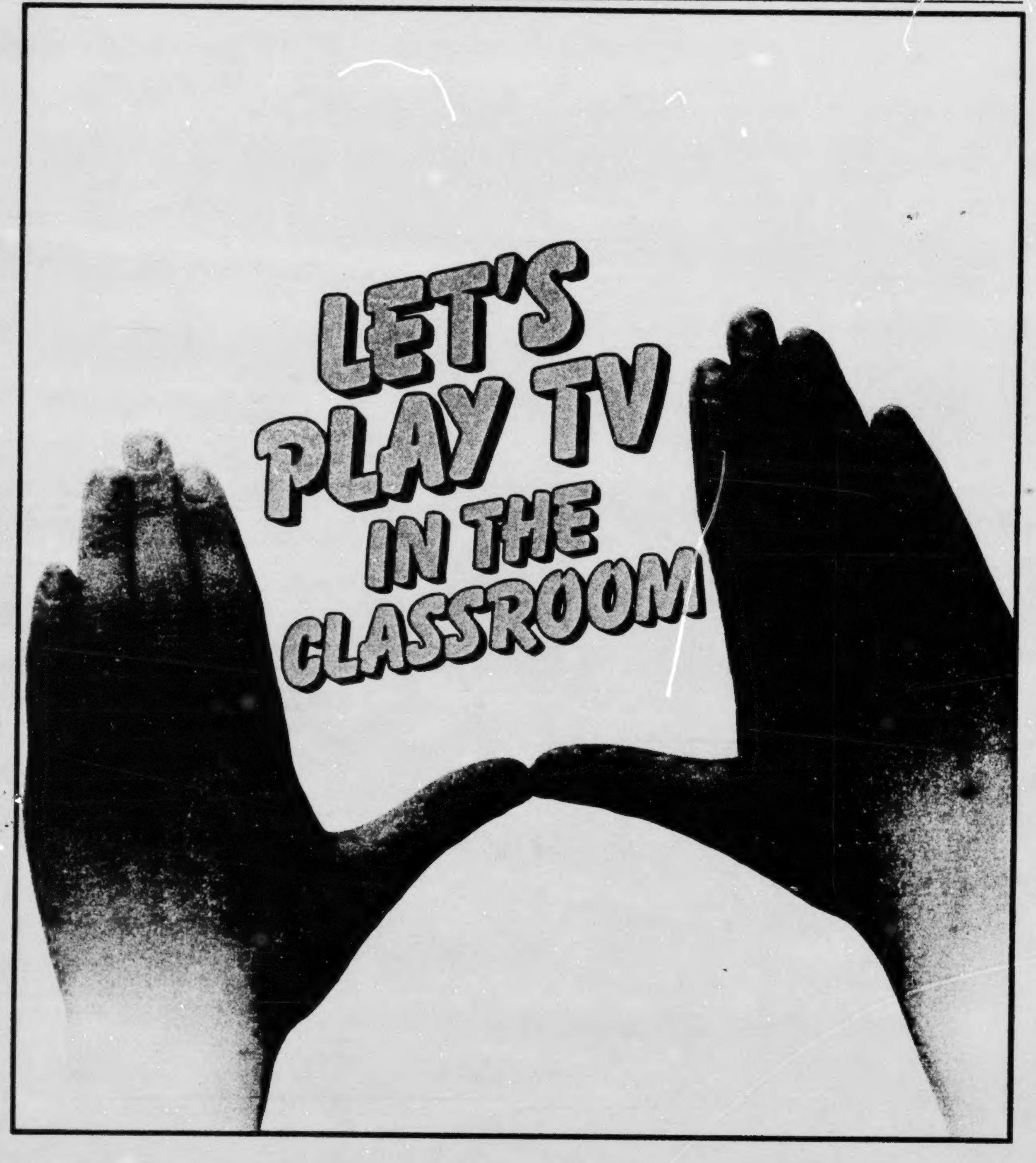
The last 32 pages of your book of readings are not numbered as pages 313 thru 344. The explanation is simple. TVOntario provided us with actual copies of Jack Livesley and Lynne Hyne's Utilization Unit for insertion into the Readings. This isn't theory. This is a real world example of somebody teaching critical viewing skills on a large scale. Thanks, TVOntario.

RAB & ADW →

TVOntario

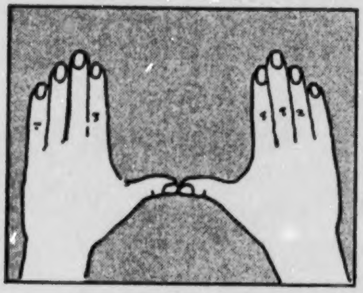
Utilization Unit

CURRICULUM APPLICATIONS OF CRITICAL VIEWING SKILLS



LET'S PLAY TV IN THE CLASSROOM

INTRODUCTION



Media education has been the object of much attention recently, as specialists at all levels have come to recognize the need for critical awareness. The sensitive and intelligent use of television is one of the primary goals of this movement, inherent in which is the belief that critical viewing skills can be taught in the schools. The following statements are but a few examples of educators' concerns:

> Younger children can be helped to become more discriminating users of radio and television if they are encouraged to discuss and share the programs they hear or view. Older children can use the media to analyse and evaluate ideas, situations, feelings and language. . . . Through such discussions children can begin to form an intelligent and analytical interest in the power and techniques of persuasive marketing. (Ministry of Education, Ontario, *Education in the Primary and Junior Divisions*, 1975, pp. 38-39.)
>
> Stereotyping, propaganda, comedic and dramatic theories, plot structure, characterization and so forth become subjects young adults like to discuss. Students do not have to just sit in front of the TV set; they can use its programming to consider critically how the medium works and how it is affecting all of us and the society we live in. . . . TV has become so much a part of children's and adults' lives that it is time for it to be thoroughly integrated in the schools' curriculum in critical and well-thought-out ways. (*EPIEgram: Materials — April, 1978*, as quoted in "Taking a Look at Television," compiled by William King in *Television & Children*, Fall 1981/Winter 1982, vol. 4, no. 4/vol. 5, no. 1, p. 65, published by the National Council for Children and Television.)
>
> My concern stems from the conviction that young people, in order to be totally literate, must have at their command the range and variety of visual as well as verbal communication skills. (Dr. Roger B. Fransecky, "Perspectives — Children, Television, and Language Education," *Language Arts*, vol. 58, no. 6, p. 714, published by the National Council of Teachers of English — Elementary Section.)
>
> Media education will be most effective when parents, teachers, media personnel and decision-makers all acknowledge they have a role to play in developing greater critical awareness among listeners, viewers and readers. The greater integration of educational and communications systems would undoubtedly be an important step towards more effective education. (*The Grünwald Declaration on Media Education*, following an international symposium sponsored by UNESCO, January, 1982.)

For its part, TVOntario has undertaken initiatives in the area of media education, among the more popular of which have been the *Let's Play TV* workshops.

Let's Play TV is a project designed to develop critical viewing skills in children; it includes exercises in television viewing as well as acting, directing, scripting, and other basic production activities which *do not involve* the use of television production equipment.

As a summer project initiated in 1981, *Let's Play TV* reached some 3000 children in nearly 80 workshops conducted in recreation centres, libraries, art galleries, and other community centres throughout the province.

In the fall of 1981, *Let's Play TV* moved into a more structured academic setting as a result of educators' concerns about the impact of television on the lives of their students: it was felt that the teaching of critical viewing skills in school would eventually influence the students' home viewing, and help determine what they learn from and about television.

In this context, the TVOntario team presented *Let's Play TV* Leadership Training Workshops to various groups of teachers at the Junior and Intermediate levels. Because of its across-curriculum applications, the participants in these workshops suggested that this approach to critical viewing be developed into a comprehensive unit of study and made available to all teachers, in order to extend the creative and effective use of TVOntario materials in the classroom.

The unit which follows is based on the workshops, and has been field tested for over a year. (It is the first utilization unit to be so thoroughly tested.) It is divided into five lessons; you are, of course, free to further subdivide the unit according to your needs, to supplement the lessons with activities and exercises of your own, and to pick and choose those activities which are best suited to your students.

If any of the series mentioned here are not familiar to you, contact your media centre to see if they are available there; if not, your media centre can arrange for you to look at them through TVOntario's Previewing Service.

We would like to know what you think of this unit. Comments, criticisms, and new ideas are welcome. We would also like to receive any samples of student work. Send your materials or remarks to:

Lynne Hyne, Utilization Officer

TVOntario
Box 200, Station Q
Toronto M4T 2T1

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TVOntario

LESSON 1

CRITICAL VIEWING SKILLS THROUGH CREATIVE DRAMA

OBJECTIVES:

- to introduce students to an understanding that television is made up of pictures (video) and sound (audio);
- to develop critical viewing skills through the viewing of a program segment;
- to use creative drama to develop an appreciation of the "acting" component of television;
- to encourage freedom of physical expression and to teach concentration, observation, and listening skills;
- to teach students to work and create individually, in pairs and in groups;
- to introduce children to mime;
- to interest children in quality TV programming, such as that provided by TVOntario.

SKILLS:

art, language (vocabulary development, writing, listening, creative drama), observation, social, viewing

MATERIALS REQUIRED:

videotape recorder and television set (for *all* lessons), crayons (one per student), newsprint (46 cm x 61 cm)

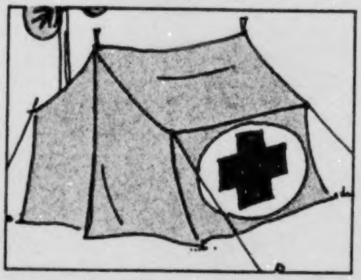
PROGRAM USED:

"Acquaintance," from the series *Barbapapa*

PROCEDURE:

1. Brainstorm. Ask the students "What is television?" and record their answers.

2. Give them paper and a crayon, and ask them to sketch quickly something that represents their favorite television program, without using words or titles. Have them show their drawings, while the rest of the class guesses the programs. Display all the pictures for later reference (Lesson 3).

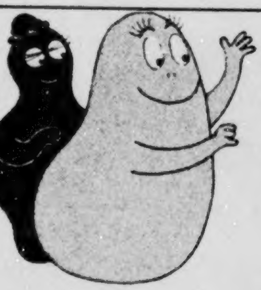


Point out to the students that the sheets of newsprint that they are using have the same 4:3 ratio as a television screen.

M•A•S•H

These exercises provide you with information about the children's television viewing habits and reference points for critical viewing discussions during the unit.

3. Turning the sound off, show a segment of the program "Acquaintance" from the series *Barbapapa*. (Note: If the students have already seen any of the programs suggested in this unit, it is of no consequence: tell them that they will be asked to look at each program in a different way, as "critical viewers." Also, while certain segments, as indicated by the Program Cues, are suggested for special focus, the programs proposed in this unit may profitably be shown in their entirety.)



PROGRAM CUES

IN CUE:* 00:35
Aerial view of Frank and Cindy's house.
VOICEOVER: It all began in the garden at the back of the house where Frank and Cindy lived. There Barbapapa was born.
OUT CUE: 02:43
Barbapapa goes off in a cage to the zoo.
VOICEOVER: And so Barbapapa ends his first day in this world.

FOCUS FOR VIEWING

"Who is this new character?" (A seed that grows out of the ground.) "What type of character is he?" (Friendly, good.) "What is happening?" (He's being taken to the zoo.)

After the students have successfully pieced together the story, point out to them that they can, in fact, "read" pictures — that they are getting many of their clues from the visual aspect of television.

4. Lead into a brief discussion listing the different visual elements of television production; bring the discussion around to the *acting* component. (This will probably have been mentioned in the brainstorming session.)

5. Tell the students that, therefore, their first step in developing critical viewing skills is to examine the *acting* part of television; this will be done by acting, themselves — singly, with partners, and in a group. Keep the following creative drama exercises short — each should be about one minute long. From time to time, have the students *freeze* (stand perfectly still) at a given signal: handclap, whistle, tambourine, etc.

Point out that all actors do relaxation exercises before performing:

- Ask the students to find their own space in an open area. Have them lie down and stretch out on their backs, arms at their sides, legs uncrossed, eyes closed. Tell them to pretend that they are floating in outer space, and should feel every part of their body relax. "Your toes, your feet, your legs, etc., should feel relaxed."
- Pretending that they are floating to the surface of a pool, have the students rise slowly (float) to a standing and then stretched position.
- Have them do further stretching, bending and limbering-up exercises similar to those done in physical education classes.

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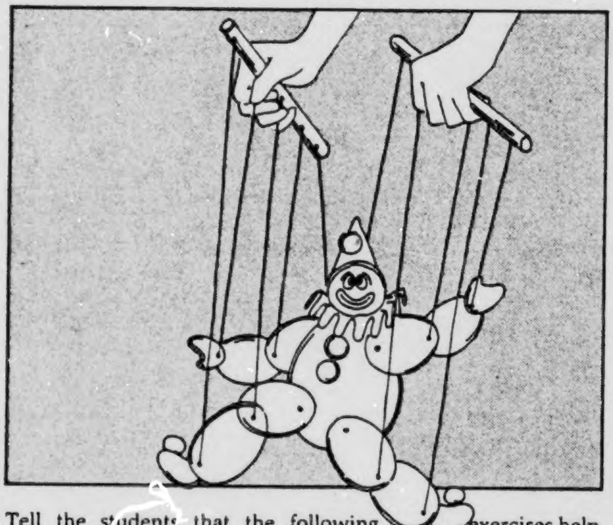
*The cues given in this unit are timed from the opening of the programs, and not from the beginning of the tapes.



Tell the students that the following exercises help to develop individual and group acting skills. Remind them that they must listen, observe and concentrate. "TV actors working in a busy studio where many activities are going on around them, have to be able to concentrate."

- Making themselves as small as can be, the "actors" imagine they are balloons growing larger and forming different shapes as imaginary air is pumped in.
- "I am a casting director looking for actors to play mechanical toys. Show me what toys you can be."
- "Pretend you are a marionnette puppet and I have control of your strings." The leader mimes the pulling of the strings as the students react.
- "You are in an attic or a basement and discover an old trunk. Using very large movements, open the trunk and mime what you find inside."
- "Show me how you look when you feel happy, sad, angry, afraid, surprised, indifferent, etc. Use your whole body — your face, your shoulders, your legs. . . ."
- Ask the students to find a partner and decide who's A and who's B. Do this for *each new* partnered exercise. Actor A initiates a slow movement as actor B follows exactly, copying all facial and body movements. Switch roles.
- With new A and B partners, students mime a conversation. The A's mime "yes," the B's, "no." (This doesn't necessarily have to be an argument.) Encourage them to use their whole body to express themselves. Then have them whisper "yes" and "no" while moving away from each other. Finally, have them move toward each other and speak, still using just the words "yes" and "no."
- In another conversation exercise, the partners use only the numbers 1 through 10 and back again, in order. For example: A: "1,2,3,4 ?" B: "5,6 !!!" Here, their facial expressions and body movements should indicate what the conversation is about.
- Tell the A's they have an invitation for two to a very special birthday party. (Ask the students for suggestions as to just what the party should include.) The B's must convince the A's to take them: the A's can only say "no," the B's, "yes." Whenever appropriate, use your *freeze* signal and ask: "How many B's convinced the A's they should go to the party?" Continue: "I have good news — more invitations have arrived and everyone can go." Again using the 1-to-10 counting exercise as dialogue, have the students pretend they're at the party, making introductions, in conversation groups, playing party games, dancing, serving and eating food. . . .
- To check their observation skills, after one of the above exercises or another one of your choice, have the students re-partner. "Looking straight at your new partner, describe in detail your *last* partner, including color of eyes, hair, height as well as clothing."
- Moving into group activities, divide the class into two teams. Mime the struggle in a tug of war. "Imagine there's a mud puddle between you."
- One student, as leader, begins making the motions and sounds of an imaginary machine (jumping, flapping arms, hooting, whistling. . .). One by one, the others link up with the leader, each making different movements and noises, to eventually build a "human machine."
- In groups of three or four, mime the elements of the setting for a TV show: furniture, props, etc. You may help by suggesting "a living room," "a department store," "an army tent," etc.

These are simply a few ideas for creative drama exercises. Make any variations on these or add your own. You will find further suggestions in the bibliography at the end of the unit.

6. Bring the students together and remind them that acting is only *one* of the elements of television. Replay the "Acquaintance" sequence from the *Barbapapa* series, again without the sound, and ask the students now to suggest lines of dialogue and sound effects to accompany the acting. Show the same sequence once more, this time with the sound on, and discuss how accurate they were in their guesses as to the sound. Continue with a discussion of the ways in which dialogue and sound reinforce the story. Point out the fact that television is the combination of pictures (video) and sound (audio).

In closing, review with the students what they have learned, and tell them what they can look forward to in the following lesson. At the end of each session, allow time for a general discussion about television. Encourage the students to do their own research.

STUDENT ACTIVITIES:

1. Make sketches of other favorite television programs. Have your family or friends guess the titles.

2. Think of other "acting" exercises you could do individually, in partners, or in groups. Tell the rest of the class about them: perhaps, all together, you could have another creative drama session.

3. When you are watching television at home, occasionally turn the sound off and practice reading the pictures.

4. While watching with family or friends, play a game suggesting sound effects, music, or dialogue *you* could put with the silent pictures.

5. Think up ways to produce sound effects for television: doors slamming, horses galloping, rain falling, etc. (There are articles in books and magazines telling how these things are done — check the library.) Share your findings with the class.

Lesson 2

Critical Viewing Skills Through Characterization and Camera Techniques

Objectives:

- to develop critical viewing skills through the viewing of program segments;
- to study the elements which go into characterization;
- to examine stereotyping;
- to offer the opportunity for role-playing;
- to introduce basic camera shots and angles;
- to teach the impact of different kinds of camera shots.

Skills:

language (oral, vocabulary, listening, writing, reading, characterization), social, role-playing, viewing, art

Materials Required:

collection of hats, assortment of props, copies of Activity Sheets 1 and 2 (see pp. 8 and 9)

Programs Used:

Patterns — *MathMakers*
Episode 1 — *Grange Hill*
Bully — *Inside/Out*
Episode 2 — *Ballet Shoes*
Episode 3 — *Grange Hill*
Episode 1 — *Follow Me*
The Showdown — *Read All About It*

Procedure:

1. Review with the students what they have learned about acting from the previous lesson. Lead to a discussion of how characterization is developed: through the way a character acts and speaks (when alone and when with others), the way other characters act and speak when he/she is there and when he/she is not there.

2. "Now let's take a look at a character from the program 'Patterns' in the series *MathMakers*, and see what we can find out about him.

PROGRAM CUES

IN CUE: 07:32
Cal, Kathy and Mrs. Purvis are trying to find their way out of the fog.
CAL: The exit is over this way, Mrs. Purvis. Just follow me.
OUT CUE: 10:20
Plasticene Man has put the cat burglar behind bars.
VOICEOVER: Plasticene Man, you've done it again.

FOCUS FOR VIEWING

"What special qualities does the Plasticene Man have?" (Flexible body, hero.) "What type of character is he?" (Kind, helpful.) "How do you know this?" (Through what he says, does; what is said about him; in other words, what is seen — video — and heard — audio — on television.)

3. "Now let's meet another character, this one from 'Episode 1' of the series *Grange Hill*.

PROGRAM CUES

IN CUE: 06:22
Long shot of auditorium as Mrs. Monroe reads out form placements.
MRS. MONROE: I'll read out the number of the form first, and then the names of the pupils in each form.
OUT CUE: 08:17
Peter Jenkins has been reprimanded and is putting on his tie.
TEACHER: Face the front and pay attention.

FOCUS FOR VIEWING

"What type of character is Peter Jenkins?" (Bully, prankster.) "How do you know this?" (What he says, what he does, the reaction of the teacher.)

Continue the discussion: "Do you know people who act like Peter Jenkins? In what ways? Do they all have the same characteristics? What are people like this called? Do you know what is meant by the word 'stereotype'?" Have the students refer to a dictionary if necessary ("a person, group, event, etc. thought of as conforming to a fixed, conventional mental picture, as if cast from a mould"). "To what extent is Peter Jenkins a stereotyped character?" "Name other television characters who are stereotyped." "In what ways are they stereotyped?"

"Here are other examples of stereotyping. The first one is in the program 'Bully' from the series *Inside/Out*."

PROGRAM CUES

IN CUE: 11:03

Adrian runs across the bridge and drops his school books.

(AUDIO FROM PREVIOUS SCENE):

FRANKIE: Where are you going, punk? Come back. The town's the other way.

OUT CUE: 13:30

Adrian pushed over the ladder. Frankie fell and hurt his leg.

FRANKIE: Please help me. It hurts. Please help me. Please.

ADRIAN: I . . . .

FOCUS ON VIEWING

"Describe both boys in this scene. How are they stereotyped?" (Villain vs. hero stereotyping: black-haired villain: blond, blue-eyed hero: manner of speech: good triumphs over evil. . . .)

"Next, let's look at 'Episode 2' from the series *Ballet Shoes*."

PROGRAM CUES

IN CUE: 04:42

Miss Brown and Posy are waiting outside the double doors of Madame Fidolia's studio.

(VIDEO FROM PREVIOUS SCENE):

Mr. Simpson has driven off with Posy, Pauline, Miss Brown and Nana on the way to the auditorium.

OUT CUE: 08:25

Madame Fidolia has met Pauline, Petrova and Posy.

MADAME: Never mind what it is, the only important thing is that I say it is. Mmm?

FOCUS FOR VIEWING

"Describe how *all* the characters are stereotyped in this sequence."

"Finally, here's another program (Episode 3) from the series *Grange Hill*."

PROGRAM CUES

IN CUE: 06:02

Closeup of Judy Preston as she waits for her friends to come out of school.

(AUDIO FROM PREVIOUS SCENE):

MR. MITCHELL: Jenkins, since you have difficulty staying at your proper desk, I doubt you'll be able to hold a position on a football field.

OUT CUE: 08:55

Jackie has just promised to return Judy's pen for 75 pence.

JACKIE: We'll see you tomorrow, then. Oh, and don't get any ideas about telling the staff. . . understand? Bye now.

FOCUS FOR VIEWING

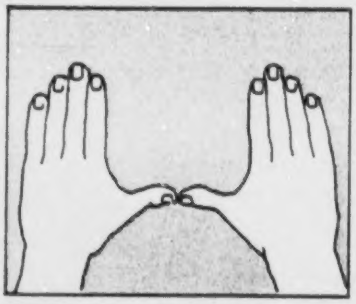
"Describe the stereotyping of the girls. Contrast the two 'types' of personalities met in this episode."

If time permits and you wish to expand on the subject of stereotyping, show the above programs in their entirety. As mentioned before, this recommendation applies to all program segments shown in this unit.

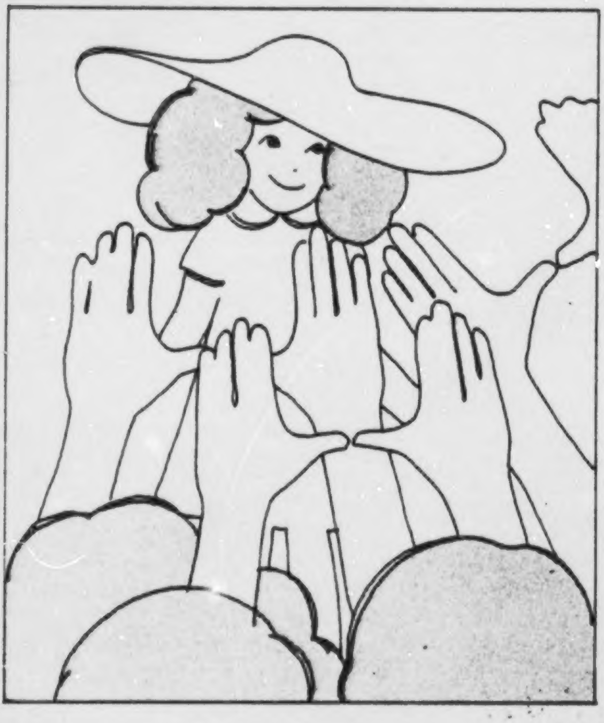
4. "Now let's try acting out some characterizations of our own." Show the students a "uniform-type" hat. "Who might wear this hat?" (postman, policeman, chauffeur, bus driver, pilot, military officer. . .). Select a volunteer to put on the hat and mime an appropriate character or role. Have remaining students guess which character or role is being played. Continue the exercise with the same hat, letting others try different roles. If one of the students plays a policeman using a gun, this would be a good time to discuss the fact that, although television shows the police in gun-toting roles some 90% of the time, in real life they do many other things such as assisting people in distress, preventing and investigating crime, directing traffic, handing out tickets. . . .

5. Continue role playing, using as great a variety of other hats as you can; move very quickly from one hat (and role) to another, and let the children guess roles and characters *after* the fact.

6. "Let's see how these different characters would look on television." To introduce students to basic camera shots, have them make a frame with their hands like this:



Select one student to pose in character wearing the hat of his/her choice. Choose six other students to move around, focusing on the character, holding their hands in the "frame" position.

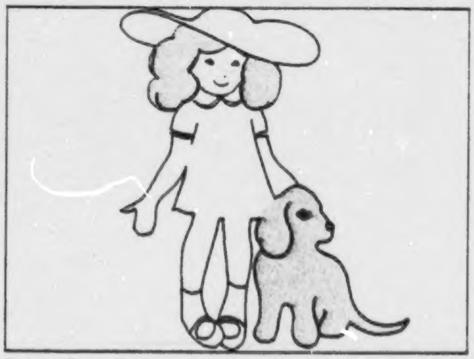


After about one minute have the students "freeze." From the six, select one student who is illustrating the closeup (one of the basic shots):

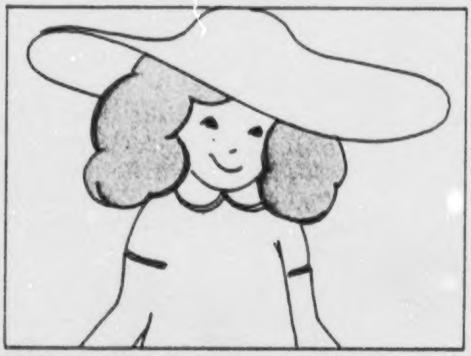
long shot — whole body in view

medium shot — half body in view

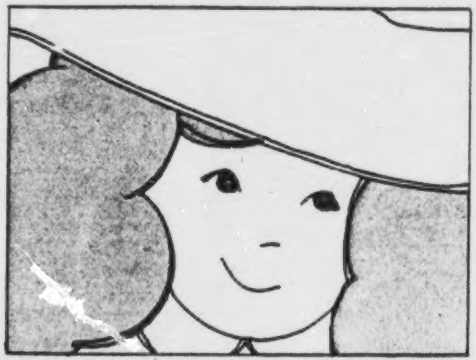
closeup shot — one part of the body in view (e.g., just the face)



Long shot



Medium shot



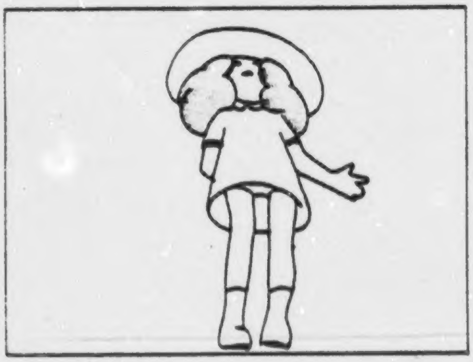
Closeup shot

Ask the student, "How much of the character can you see in your frame?" (Only the hat and face.) "What kind of shot would you call this?" (Closeup shot.) "Remaining where you are, everyone in the class take a closeup shot of something in the room." Proceed in the same way to demonstrate the long shot and the medium shot.

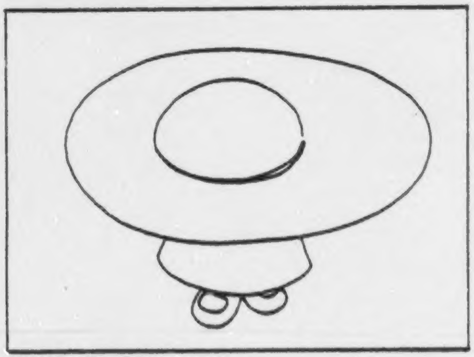
7 To introduce the techniques of high- and low-angle shots, request pairs of A and B students to carry out the following:

Cameraman (A) sits in chair and frames character (B) who poses standing. This gives the cameraman a low-angle shot of the character. Cameraman (A) stands and frames character (B) who poses sitting in chair. (The cameraman gets a high-angle shot of the character.) Reverse roles. Change props whenever necessary to maintain enthusiasm in characterizations.

Discuss with students the effects of high- and low-angle shots. "How would you make a character look important?" (Low-angle shot.) "Suggest a situation or character that would require one of these two shots" (e.g., high-angle shot of the bully in the series *Inside/Out*).



Low-angle shot



High-angle shot

"To see the effectiveness and impact of the use of camera angles, let's look at 'Episode One' of the series *Follow Me*."

PROGRAM CUES

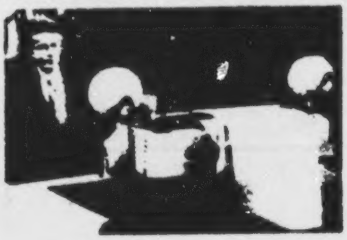
IN CUE: 00:10
Closeup of radio. Hand reaches in and turns it off.
OUT CUE: 01:20
Camera zooms in on cassette tape recorder and dissolves to opening titles and theme song.

FOCUS FOR VIEWING

"What angles are used and to what effect?"

Students may expand the discussion to the cameraperson's use of tilting and panning.

8. "What effects do different camera shots have on the impact of TV characters? Here is a segment of the program 'Showdown' in the series *Read All About It*."



PROGRAM CUES

IN CUE: 01:05
Duneedon appears at the coach house door.
(VIDEO FROM PREVIOUS SCENE):
Program opening with title "Chapter 20, The Showdown."
OUT CUE: 02:28
Closeup of Duneedon talking to Otto and Theta.
DUNEEDON: I order you to answer me.

FOCUS FOR VIEWING

"What kind of character is Duneedon?" "Is he a stereotyped character?" "Which production elements help to give us information about the character?"

In the discussion, the pupils may describe Duneedon as a forceful, demanding, powerful character, and indicate that the stereotyping is more sophisticated than that in the program "Bully." When taken out of context, this short segment may even portray Duneedon as a hero. The production elements used to give this impression include camerawork, setting, music, lighting, costuming, acting, body language, dialogue, etc. You might want to examine each in turn: a series of long or cover shots followed by a closeup is used to emphasize his strength and power; the dialogue (script) indicates domination; the lighting and sound produce an eerie effect. . . . As they make these analyses, the students are critically viewing the pictures (video) and sound (audio) of the television program.

9. To review the concepts learned in the session about characterization and camera techniques, have the students draw one of their favorite characters in a long, medium or closeup shot. For those who draw closeups, make sure that whatever is focused on fills the frame.

STUDENT ACTIVITIES:

1. Pick and Choose! See Activity Sheet 1.

2. Begin Crossword Puzzle. See Activity Sheet 2. It may take until the end of the unit to complete the puzzle. (The solution is on page 24.)

3. While watching television with family and friends, play a game of calling the shots.

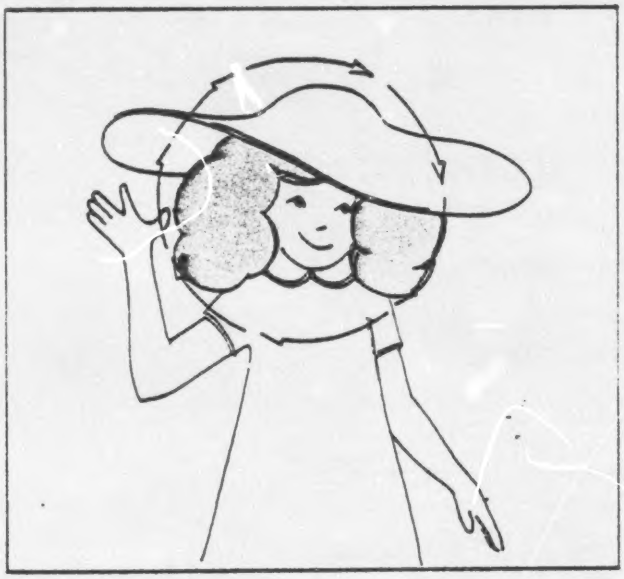
4. Write a two-paragraph character sketch describing a stereotyped personality from a television show: a typical father or mother, a car salesman, a nurse....

PICK AND CHOOSE

Complete any three of the activities.

1. Play a game of "Calling the Shots." Switch roles. For example:

closeup — circling face
medium shot — circling half the body
long shot — circling whole body

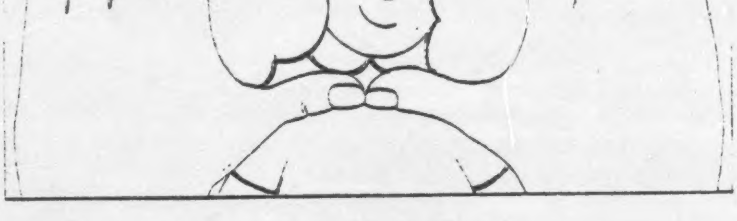


2. Working in pairs, use your "hand frames" to practice the three basic shots. Add the two angles for more variety. Use props or hats to aid you in your characterizations.

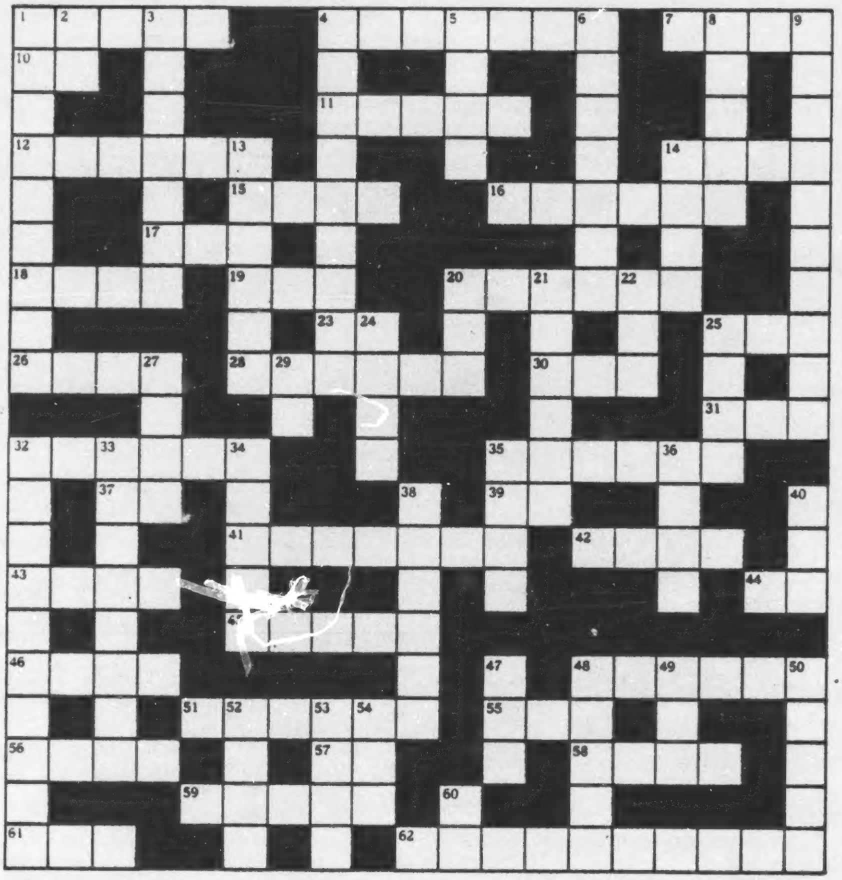
Partner A — cameraman
Partner B — actor posing
Reverse roles.

3. Research other terminology associated with camerawork; for example, establishing shot, medium two-shot, etc. Give a written report.

4. Collect still pictures which illustrate the various kinds of shots. Label the pictures with the name of the correct shot.



CROSSWORD PUZZLE



ACROSS

1. The picture portion of a TV show, as distinguished from the audio or sound portion; used in expressions such as ——— games, ——— tapes, ——— cassettes, etc.
4. A TV shot taken at very close range
7. A group of actors in a TV show; also a verb meaning to choose and assign actors for the various roles
10. Working, or in operation, as: "The TV set is ———."
11. Someone performing in a TV show, play, etc.
12. A device for taking pictures
14. Transmitted during the actual performance, as opposed to taped or recorded
15. Close; not far
16. Place where TV programs are produced or from which they are broadcast
17. The last line of an actor's speech; also, a card, paper, etc. attached to something as a label or worn as identification: price ———, name ———

DOWN

1. A comment or narration off camera
2. Preposition meaning within or inside; as "The camera is ——— focus."
3. Something that produces a particular impression, as in "sound ———" or "special ———"; abbreviated SFX
4. A person in a play, story, etc.; also, a role as portrayed by an actor or actress
5. A picture or sequence of pictures in a TV program taken by a single continuous run of a camera
6. The image on a TV screen
8. The sound part of a telecast, as distinguished from the video part
9. The broadcasting of pictures and sound; often abbreviated to TV
13. The points from which something is viewed; TV scenes can be shot from high ———, from low ———, etc.
14. The king of beasts; is used as a symbol by a major TV (and movie) company

continued on next page

ACTIVITY SHEET 2 *continued*

Across *cont.*

18. Abbreviation for videotape recorder
19. To permit or allow
20. The part of a TV set upon which the picture is shown
23. A sound expressing surprise, doubt or enquiry, as "Only in Canada, ———?"
25. Prefix meaning "three," as in ———pod (a three-legged support for a camera)
26. An actor's part in a play
28. The text of a TV show
30. To stop photographing a TV scene; also, to make a sudden change from one scene or character to another
31. To forbid; to censor (a movie. . .)
32. In a middle position; a ———shot is one in which the camera is neither very close to nor very far from the subject
35. To become motionless or fixed; to stop moving
37. Impersonal pronoun
39. Abbreviation for "identification," as in ——— card, ——— bracelet
41. Distinctive or unique; for a particular purpose, as in ——— effects; also, an elaborate TV program not part of a regular series
42. Furniture or article used as part of the setting in a TV show; short for "property"
43. To move by turning over & over; also, to start operating ("Let the cameras ———.")
44. Abbreviation for Black & White (TV set)
45. To take and hold something moving; also, to get (one's attention)
46. One side of a leaf or sheet of paper, book, script, etc.
48. In TV, to call the camera shots; to tell the performers and technicians what to do
51. Makes a border for, like a picture; also, the small individual pictures on a strip of film
55. Adverb meaning gone by, past, before now
56. To begin or to start, as "an establishing shot is used to ——— a scene;" opposite of close
57. Prefix meaning "not;" ———complete; ———visible
58. Not short; in a ——— shot, the camera is at some distance from the action
59. Anything that may be heard
61. The organ of sight
62. A chart on which the video and audio parts of a TV show are laid out

Down *cont.*

20. The background, scenery, etc. used for a play or TV show
21. To register sound or visual images on a disc, a tape, etc.
22. Abbreviation for enter or entrance
24. The opposite of low; ——— angle shots make the subject appear smaller
25. The part of a TV set containing the screen, as the picture ———; also colloquial for television ("the ———")
27. To prepare a film for TV by cutting, rearranging, etc.
29. Abbreviation for company
32. An instrument used to pick up sound; often abbreviated to "mike"
33. Conversation or passages of talk in a play, story, etc.
34. Sounds or tones arranged in melody, harmony, rhythm, etc.
35. A roll or sheet of thin flexible material used in making photographs
36. Rapid adjustment of a TV camera permitting closeup or long shots without changing the focus; the type of lens used is called a ——— lens
38. The lamps, bulbs, etc. used to illuminate a scene, as in the expression "———, camera, action"
40. Opposite of high; a ——— angle shot makes the subject seem larger
47. To move a camera from side to side
48. A low, wheeled platform on which a camera is mounted so that it may be moved about the set
49. To move quickly; also, a succession of performances, as in "this is a first ——— movie"
50. Recorded, as opposed to live, performances
52. A space within a building enclosed by walls or partitions
53. That part of us which thinks, as in "(something) blows my ———"
54. To finish; also, the last part of anything
60. Preposition meaning on, in, near or by

LESSON 3

CRITICAL VIEWING SKILLS THROUGH STORYBOARDING

OBJECTIVES:

- to apply the knowledge of camera work to developing a scene for television;
- to teach the students the concept and techniques of making/creating a storyboard;
- to review with students the understanding that television is made up of pictures (video) and sound (audio);
- to review stereotyping;
- to teach critical viewing through the viewing of a program segment;
- to present the concept of "point of view" as related to television — especially the director's role in determining the point of view.

SKILLS:

language (oral, vocabulary, organizational, characterization, role-playing, listening, writing), art, social, research, classification, viewing

MATERIALS REQUIRED:

students' sketches drawn in Lesson 1, collection of hats, assortment of props, newsprint, crayons (one per student), cardboard cameras (one per student — see Procedure 2), copies of Activity Sheets 3, 4, and 5

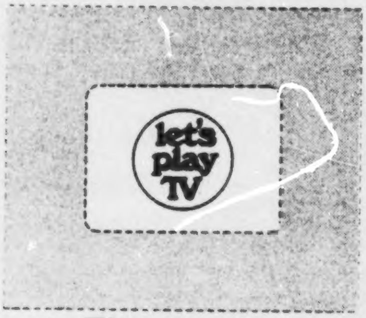
PROGRAM USED:

Episode 1 — *The Prince and the Pauper*

PROCEDURE:

1. Look back to the pictures which represent the students' favorite programs (Lesson 1, Procedure 1). "What kind of shots have you drawn in your pictures?" (The majority will probably be long shots, as a whole program is being established.) Use this discussion to review the basic camera techniques.

2. "Now that you know about camera shots, and how to frame them with your hands, let's make our own cameras." Using Activity Sheet 3 as a stencil, have the students make their own simple, cutout (no frills) cardboard cameras:



Ratio: 4:3 (Same as a TV screen)

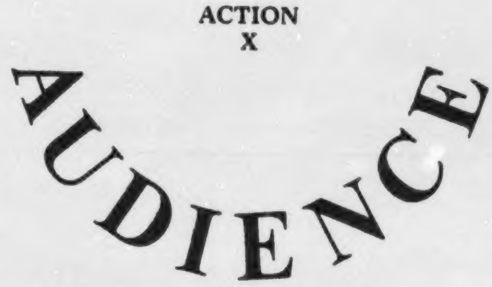
3. Explain that these cameras are to be used in the same way that real TV cameras are used: they must be held horizontally (like a TV screen) and *at least* 25 cm away from the camera-person's face. (This distance is often greater, depending on the kind of shot framed.)

4. Have the students explore their environment individually with their new cardboard cameras, practicing the three basic shots combined with high and low angles: high-angle closeup, low-angle long shots, etc.

5. When the students are comfortable with their cameras, it is time to discuss how a TV scene is plotted — how the different shots are decided upon, with the appropriate dialogue and sounds. This is done by first making a *storyboard* of the scene, that is, a sheet where, side by side, are shown the visual (picture) and audio (dialogue and sound) elements that will make up each step in the scene. You can use the following brief story to show how this is done, first by acting it out, then by determining the camera shots, then by putting it down on paper and adding the audio portions:

Two customers enter a hat store at different times. Each one in turn approaches the salesperson who uses all his/her wiles to sell a hat. The scene is completed by the actors involved. Note: The entire scene should take no longer than one minute.

Arrange the students in the following seating plan before the scene begins:



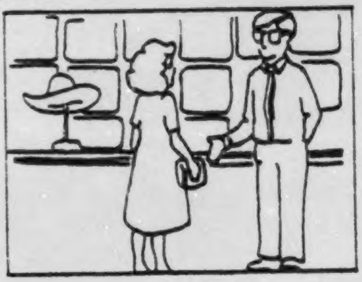
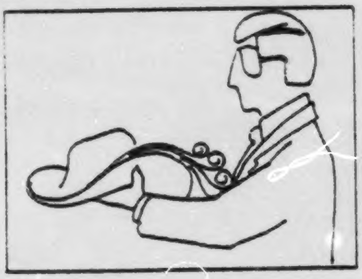
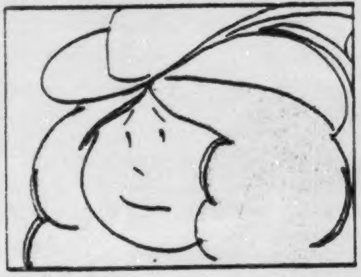
While three volunteers act out the story/scene, the remaining students watch. In the second walk-through, have the students focus their cardboard cameras on the action and decide upon three significant shots: there should be an opening, a middle and a closing shot which will tell the story. It is important to point out to the actors that each walk-through of the story must be exactly the same. On the third walk-through, freeze the action several times to allow the students who are watching to tell their choice of shots and explain their reasoning: i.e., closeup shot of second customer because his/her expression shows that he/she doesn't like any of the hats. Here, there are no right answers, just as many possibilities as there are students.

6. During this exercise, the students will probably have noticed that they all, or nearly all, chose different shots. Explain the concept of point of view which will, of course, be affected by the students' position in the classroom. The seating plan, as above, will help to emphasize this concept.

Students can learn from this experience that what they see on television is another person's (the director's) point of view, and that it isn't necessarily the point of view or shot that they (the viewers) might have chosen.

7. The next stage in developing a storyboard for this scene is to choose three shots suggested by the students to tell the story: one each for the beginning, middle and end. Working on a blackboard or a flip-chart in front of the whole class, ask for volunteers to sketch and label the shots or video portions. Beside each shot write in the appropriate dialogue and sound effects or audio portions; for example:

STORYBOARD

Video	Audio
Shot 1: Long shot 	Store sounds, cash register, music "Good morning. Can I help you?"
Shot 2: Medium shot 	Store sounds continued (softer) "This one will look wonderful on you."
Shot 3: Closeup 	Store sounds continued (softer) "I'm sorry, but it's just not me!"

8. Now the students can devise their own storyboards. Divide the class into groups of three:

A — cameraperson, with cardboard camera
B — actor
C — actor with a prop

(Before handing out the cameras and props, have students decide who is A, B and C, to avoid any conflicts.)

C must try to sell his prop to B. Together, each group plans three shots that will tell the very short (30-second) story — opening shot, middle shot, and closing shot. For example:

opening shot — long shot that establishes the situation
middle shot — closeup of the article being sold
closing shot — medium shot of the two characters shaking hands to close the deal.

NOTE: Problems or conflicts developed in any of the storyboards should not be solved through violence.

In each group, after the three basic shots have been agreed upon, B and C walk through the action while A frames the shots. When this has been done, replay each of the brief scenes before the whole class, having A freeze the action, call the shot, and then describe the picture being framed. Each group then draws its own story board on a piece of newsprint. Keep these for the next lesson which deals with writing a script.

9. To end the lesson and review the concepts taught, show the students a segment from "Episode 1" in the series *The Prince and the Pauper*.

PROGRAM CUES

IN CUE: 02:00
Tom Canty's father returns home. A dog barks as he opens the door and enters.
JOHN CANTY: (Laughs) Pour me some ale, woman.
OUT CUE: 04:18
Tom's father throws Tom's penny on the table.
JOHN CANTY: Huh. Go get the jug filled with ale.

FOCUS FOR VIEWING

"Select three shots that you could use to make up a storyboard for this scene."

Have the students use Activity Sheet 4 to illustrate the three shots they chose while watching this segment, and ask them to fill in the appropriate dialogue and sound. (Note: Shots and dialogue do not have to reflect exactly what happens in the scene.) Display the students' storyboards.

STUDENT ACTIVITIES:

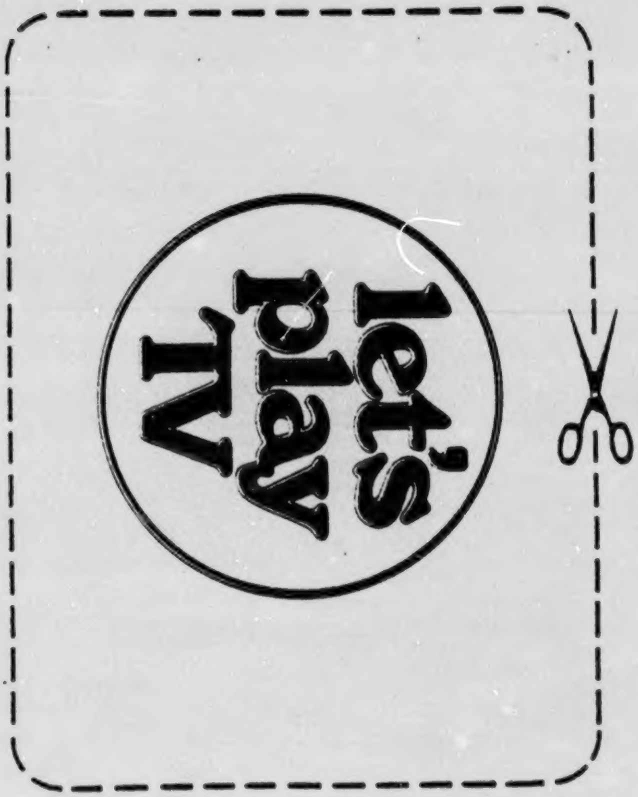
1. Collect examples of storyboards from comic strips and advertisements. Reassemble the pictures into new storyboards. Add new audio portions (suggestions for dialogue, sound and music).

2. As you watch programs at home with family or friends, imagine you are the director and decide how you would shoot the same scene.

3. Do Activity Sheet 5 — "Let's See That Play Again!"

LET'S PLAY TV CAMERAS

1. Cut along dotted line.
2. Use this sheet as a stencil to make your own cardboard camera.
3. For your own "Let's Play TV" button, cut around circle and mount on cardboard.



ACTIVITY SHEET 4

STORYBOARD

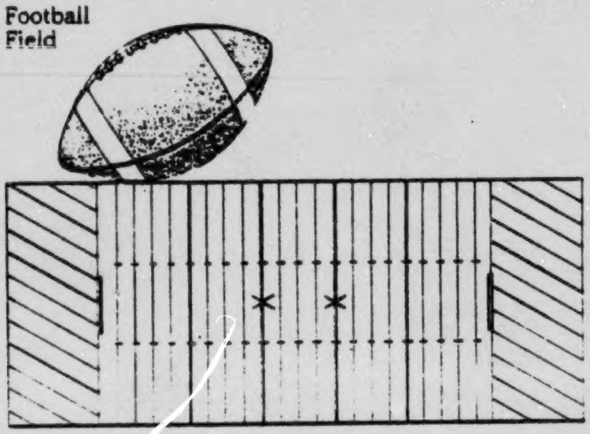
Video	Audio
Shot 1:	Dialogue and other sounds:
Shot 2:	Dialogue and other sounds:
Shot 3:	Dialogue and other sounds:

ACTIVITY SHEET 5

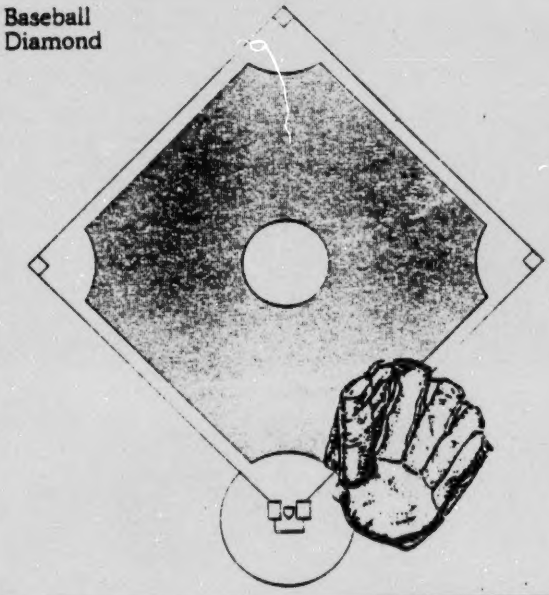
LET'S SEE THAT PLAY AGAIN!

As you watch sports programs, decide how many cameras for a particular game are used and their probable location. Draw the location of the cameras on the following diagrams. Share the results with your classmates.

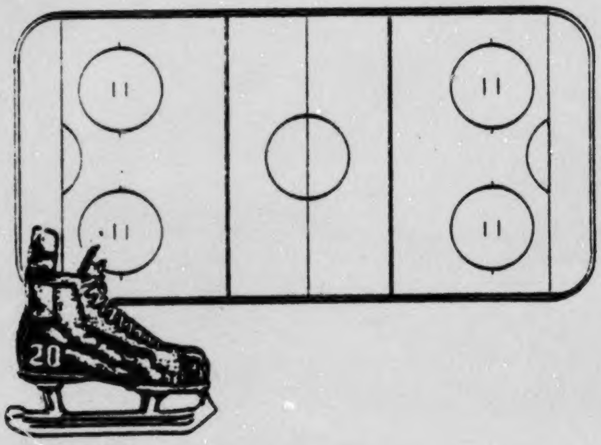
Football
Field



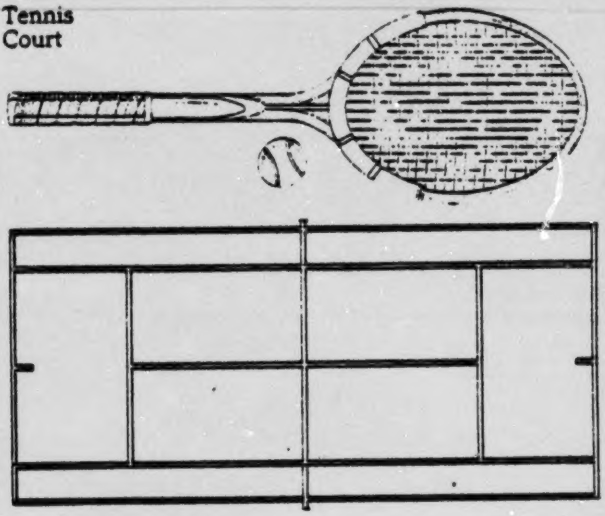
Baseball
Diamond



Hockey
Rink



Tennis
Court



LESSON 4

CRITICAL VIEWING SKILLS THROUGH SCRIPTING

OBJECTIVES:

- to teach students how to write a script;
- to teach critical viewing through the viewing of a program segment;
- to review with students the concept and technique of making a storyboard;
- to review with students the understanding that television is made up of pictures (video) and sound (audio).

SKILLS:

language (oral, vocabulary, writing, organizational), research, social, viewing

MATERIALS REQUIRED:

newsprint storyboards from last lesson, newsprint, crayons (one per student), overhead transparency (see Procedure 1), overhead projector, copies of Activity Sheets 6, 7 and 8

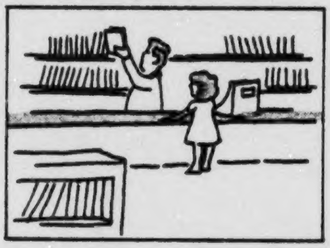
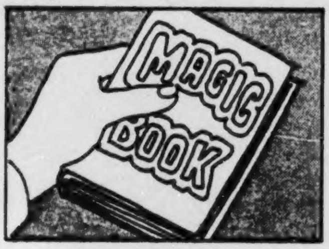
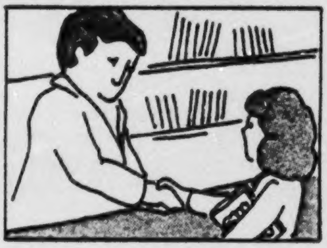
PROGRAM USED:

Program 1 — Matter — *The Science Alliance*

PROCEDURE:

1. The students are now ready to build a script. Review with them the steps in making a storyboard; use the "Sell That Prop" example described in the preceding lesson.

STORYBOARD ("Sell That Prop")

VIDEO	**AUDIO**
Shot 1: LS (establishing long shot) 	Dialogue and other sounds: Salesman introduces self and product, "Hi, etc."
Shot 2: CU (closeup)  	Dialogue and other sounds: Salesman's VO (voiceover) "Buy this and it will make your sister disappear."
Shot 3: MS (medium two-shot) 	Dialogue and other sounds: None (Good shots often tell whole story)

To make the connection between the storyboard and the script, make an overhead transparency of the storyboard example above. While the storyboard is projected onto a screen, use a blackboard or chart paper to develop with the students the scriptbuilding stage.

Scripts are made up of video and audio sections. The audio component remains the same as the storyboard. The video component gives a *written* description of the pictures from the storyboard. For example, and compared to the storyboard above, the script will look like this:

SCRIPT

VIDEO (The picture)	**AUDIO** (Dialogue and other sounds)
Shot 1: LS (establishing long shot) Salesman with magic book	Salesman introduces self and product, "Hi, etc."
Shot 2: CU (closeup) Salesman's hand and book	Salesman's VO (voiceover) "Buy this and it will make your sister disappear."
Shot 3: MS (medium two-shot) Salesman and customer shaking hands on deal	None (Good shots often tell whole story)

3. Repeat the above procedure, using the storyboard that the whole class developed together in the last lesson (Selling the Hat).

4. In order to put their own scenes in script form, the students use the same procedure and format. Give them each a copy of Activity Sheet 6. In groups of three, as before, have them complete a script from their "Sell That Prop" storyboards.

5. "Now let's examine a professional television script." Hand out copies of Activity Sheet 7. "You will notice that an actual script is more complicated than the basic three-shot scripts we have been developing."

"In groups of three, decide how you would cast the roles in the script. Take turns walking through the scene and rehearsing it. Decide the shots, and what music and sound effects you might use."

6. Show the students the corresponding segment from "Program 1 — Matter" from the series *The Science Alliance*.

PROGRAM CUES

IN CUE: 01:00
  Bryant's hand has just pulled on a card that says "RIDDLE"
  BRYANT (voiceover): What does Rex have in common with grape juice and the air in a tire?
OUT CUE: 01:54
  Titles appear: Solid, Liquid, Gas.
  BRYANT (voiceover): That's right. Because matter can be found in one of three states: the solid state, the liquid state or the gas state.

FOCUS FOR VIEWING

"See how the director turned the written script into a television program. Are there any changes from the script?"

"You will notice some new terms and abbreviations. See how many you can figure out."

7. Once the writing of a script has been taught, the emphasis of this lesson is on the activities listed below. For number 3, refer to *The Third Eye*, page 24 ff (see Bibliography).

STUDENT ACTIVITIES:

1. Select a brief story or poem for storyboarding and scripting. See Activity Sheet 8. (Confirm your choice with your teacher.) Illustrate and script only part of the story or a few lines of the poem, or a key situation (e.g., the climax). Begin with three shots, adding more as soon as you feel that you can. Your teacher will have extra Activity Sheets available, if needed.

2. Collect (from magazines and newspapers) a variety of pictures that demonstrate various types of shots. Arrange the pictures in a sequence and write a short story based on them. In small groups, examine these stories and discuss the effects of the various shots.

3. All together, listen to a poem and, in new groups, decide how to illustrate its story, first with a storyboard and finally with a TV script. Try using one or two stanzas of "The Listeners" by Walter de la Mare, or other short narrative passages of verse. Share your results with the other groups in the class. You will notice that there is a great variation in the different storyboards and scripts.

Discuss the differing interpretations and points of view that have resulted from the same poem. Then apply this experience to home viewing of news programs — that is, how the same world events are interpreted in different ways.

4. Gain some experience in the field of interviewing. With family or friends, watch several programs in which prominent personalities are featured. Decide on someone you would like to interview, and write a two-page script. (Did you know that everything in television, including interviews, on-the-spot news reports, comic monologues, etc., is scripted?)

ACTIVITY SHEET 6

SCRIPT BUILDING

Video (The picture)	**Audio** (Dialogue and other sounds)
Shot:	
Shot:	
Shot:	

A REAL TV SCRIPT

("Program 1 — Matter," *The Science Alliance*)

Shot:	Video	Audio
16	REX & JUDY JUDY ON CAMERA MS — JUDY RIGHT FRAME	JUDY OC: The answer to Bryant's riddle has something to do with the subject of our program . . . matter.
	SUPER "MATTER" OVER JUDY	
17	DISSOLVE TO WATERFALL — FULL FRAME SUPER "LIQUID"	REX VO: Matter can be a liquid like water . . .
	SPLIT SCREEN — 2 WAY SPLIT WATERFALL — LEFT FRAME	
18	MILK — RIGHT FRAME	or milk . . .
	SPLIT SCREEN — 3 WAY SPLIT WATERFALL — LEFT FRAME MILK — LOWER RIGHT FRAME	
19	GRAPE JUICE — UPPER RIGHT FRAME	or grape juice.
20	DISSOLVE TO BALLOONS — FULL FRAME WITH SUPER "GAS"	JUDY VO: Matter can be a gas like the helium in a balloon . . .
	SPLIT SCREEN — 2 WAY SPLIT BALLOONS — LEFT FRAME	
21	SKY AND CLOUDS — RIGHT FRAME	or the air all around us . . .
	SPLIT SCREEN — 3 WAY SPLIT BALLOONS — LEFT FRAME SKY & CLOUDS — LOWER RIGHT	
22	INNER TUBE, TIRE — UPPER RIGHT	or the air in a tire.
23	DISSOLVE TO BUILDINGS — FULL FRAME SUPER "SOLID"	REX VO: Or matter can be solid like buildings and trees . . .
	SPLIT SCREEN — 2 WAY SPLIT BUILDINGS — LEFT FRAME	

continued on next page

24	ROCKS AND LAKE — RIGHT FRAME	or like rocks and seagulls . . .
	SPLIT SCREEN — 3 WAY SPLIT BUILDINGS — LEFT FRAME ROCKS AND LAKE — LOWER RIGHT	
25	REX — UPPER RIGHT FRAME	REX OC: or like you and me.
26	DISSOLVE JUDY — FULL FRAME	JUDY OC: Solids, liquids, and gases are called
	ADD SUPER "STATES OF MATTER" IN UPPER LEFT CORNER	states of matter. (LOOK UPPER LEFT)
27	ADD REX — LOWER LEFT	So the answer to Bryant's riddle is that Rex (LOOK LOWER LEFT(
28	ADD GRAPE JUICE — LOWER RIGHT	and grape juice (LOOK LOWER RIGHT)
29	ADD TIRE — UPPER RIGHT	and the air in a tire . . . (LOOK UPPER RIGHT) are all matter. BRYANT VO: (AUDIO PLAYBACK) That's right. Because matter can be found in one of three states: the solid state, the liquid state, or the gas state.

STATES OF MATTER	TIRE SUPER "GAS"
REX SUPER "SOLID"	GRAPE JUICE SUPER "LIQUID"

STOP TAPE

ACTIVITY SHEET 8

I CAN DRAW A STORYBOARD AND WRITE A SCRIPT

STORYBOARD	SCRIPT BUILDING	
	Video (The picture)	**Audio** (Dialogue and other sounds)
	Shot:	
	Shot:	
	Shot:	

Crossword Puzzle Solution

(from Activity Sheet 2)

V	I	D	E	O			C	L	O	S	E	U	P		C	A	S	T
O	N		F				H			H			I			U		E
I			F				A	C	T	O	R		C			D		L
C	A	M	E	R	A		R			T			T		L	I	V	E
E			C		N	E	A	R			S	T	U	D	I	O		V
O			T	A	G		C						R		O			I
V	T	R	S		L	E	T			S	C	R	E	E	N			S
E					E		E	H		E		E		N		T	R	I
R	O	L	E		S	C	R	I	P	T		C	U	T		U		O
			D			O		G				O				B	A	N
M	E	D	I	U	M			H			F	R	E	E	Z	E		
I		I	T		U				L		I	D			O			L
C		A			S	P	E	C	I	A	L		P	R	O	P		O
R	O	L	L		I				G		M				M		3	W
O		O			C	A	T	C	H									
P	A	G	E						T		P		D	I	R	E	C	T
H		U		F	R	A	M	E	S		A	G	O		U			A
O	P	E	N		O		I	N			N		L	O	N	G		P
N				S	O	U	N	D		A			L					E
E	Y	E			M		D		S	T	O	R	Y	B	O	A	R	D

LESSON 5

CRITICAL VIEWING THROUGH PRACTICE IN VIEWING

OBJECTIVES:

- to have students apply critical viewing skills to all their television viewing;
- to review objectives from the previous lessons.

SKILLS:

language (observation, vocabulary, oral, writing), research, social, viewing

MATERIAL REQUIRED:

copies of Activity Sheet 9

PROGRAMS USED:

The Watcher — *Tom Grattan's War*
Ugly Little Boy — *Classics Dark and Dangerous*

PROCEDURE:

The object of this lesson is that the students practice their critical viewing skills by focusing on the production elements of selected program segments.

1. "The Watcher" from *Tom Grattan's War*

PROGRAM CUES

IN CUE: 07:07
Tom and Old Stan leave the train station. Dissolve to long shot of buggy travelling down the road left to right.
(AUDIO FROM PREVIOUS SCENE):
STAN: Are you young Tom Grattan?
TOM: Yes, sir.
STAN: Well, come on. Up you get.
OUT CUE: 11:48
Stan has returned to the buggy after checking his traps.
STAN: Not all night. Not here.

FOCUS FOR VIEWING

Various production elements: see sequence below.

Sequence:

"Watch and listen. I want you to look particularly at the kinds of shots. Raise your hands when you see the first closeup." START TAPE at beginning of sequence. STOP TAPE or, if there is one on your machine, USE PAUSE BUTTON as the students' hands signal the first closeup. Ask: "How do you think Tom feels as he begins his journey?" (Curious, looking forward to his new way of life, etc.) ROLL TAPE. STOP or PAUSE just after the first voiceover, which begins, "A fresh March wind . . ." Ask: "How does Tom feel?" (Answers similar to last.) "What atmosphere or mood has been set so far?" (Pleasant.) "How do we know this?" (Long shots, slow camera movements, pretty scenery, slow and pleasant music, soft colors, etc.)

BEFORE ROLLING TAPE, say "Put your hands up when *you* feel a change in mood or atmosphere." (Hands will go up at different times.) STOP or PAUSE tape as voiceover begins, "But then . . ." Ask: "What is the change in mood?" (More frightening; something is going to happen.) "How do we know?" (Dark shadows, sharp rocks, change in music — percussion and lower tones.)

BEFORE ROLLING TAPE, say "Focus on the continued raising of suspense." ROLL TAPE. STOP or PAUSE when Stan leaves to check on his rabbit snares. "How does Tom feel now?" (Scared, lonely.) "How do we know?" (Tom asked to come along; we are given Tom's point of view as he sees Stan walk away and leave him alone.)

BEFORE ROLLING TAPE, "Watch carefully and listen for as many changes in picture and sound as you can, and tell how these production techniques help create the atmosphere of suspense." ROLL TAPE AND PLAY to end of segment. "How was the suspense raised before we saw the watcher?" (Dark shadows, faces in rocks, words used by the narrator — "The rocks seemed to leer down . . ." — , abrupt change in music, hand coming into frame to pick up the binoculars.)

"After we see the watcher, how is the suspense kept up and made more terrifying for Tom?" (Quick cuts or fast change of pictures, increase in volume and tempo of music, sudden disappearance of watcher, sudden appearance of dead rabbit on camera, Stan's final lines in the segment.) End the discussion by asking, "Why do you want to watch the rest of the program?"

2. "Ugly Little Boy" from *Classics Dark and Dangerous.*

PROGRAM CUES

IN CUE: 20:39
Dr. Hoskins is in his office as Nurse Fellowes enters with cassette tape recorder.
NURSE: Dr. Hoskins, you must listen to this.
OUT CUE: 25:35
End of program.

FOCUS FOR VIEWING

Various production elements: see sequence below.

Sequence:

With no introduction, ROLL TAPE to following dialogue: Nurse — "You'd be killing a human being." Doctor — "Not killing. When stasis is released, he will simply become a Neanderthal boy in a Neanderthal world again." STOP. Ask: "What is being discussed?" (A third person and whether he should stay.) "What is the setting?" (Futuristic, scientific, science fiction.) "Who are the people doing the discussing?" (Doctor/scientist and nurse.) "How do we know all of the above?" (Discussion about an experiment, use of the word "specimen," costumes, setting, use of color.)

BEFORE ROLLING TAPE, ask: "How is suspense raised and kept up?" "What is the major conflict between the two main characters?" "How is the ending foreshadowed?" ROLL TAPE to end of program.

The answers to the above questions will include comments on the suspense (dialogue, music and sound effects, acting — especially the reactions between the nurse and the ugly little boy), contrasting characters (movement and dialogue), foreshadowed ending (relationship between the ugly little boy and the nurse, the look on the latter's face when she has to leave).

After discussion of this portion of the tape, you may wish to play the program from the beginning and examine further the elements of suspense, foreshadowing, and character development.

It is important that the stereotyping of characters be discussed in both programs.

3. Similar approaches to the critical examination of program segments can be taken with other TVOntario programs already being used in the classroom — for example, "That's My Name, Don't Wear It Out" and other short stories from *Stories Round the World*, as well as any of the visual novels, stories, or dramatizations: *Adventures in History, Doombolt Chase, Ghosts of Motley Hall, Midnight Is a Place, The Phoenix and the Carpet, Tom's Midnight Garden*. And, of course, other TVOntario programs may be substituted for any of those suggested within each lesson.

STUDENT ACTIVITIES

1. Go to the school library. Select a program segment from a videotape that you would like to play for your classmates. Before showing the tape in class, write out some thought-provoking questions you would like them to answer.

2. Use Activity Sheet 9 to make a log of the time you spend watching TV, as well as the kinds of programs you view at home — situation comedies, documentaries, drama, interviews, cartoons, etc. This is a family activity that should lead to a fun discussion; you will not be asked to report on this in class.

3. Visit a TV station, cable company or your school board media centre. Interview a staff person to find out the kind of jobs that different people are doing in order to make television work for you.

HOW MUCH DO YOU WATCH?*

To start, find out how much TV you and other members of your family watch in an average week. Use this form to fill in the total hours you spend viewing each day, and then total up your hours for the week.

What the results mean...
They could mean different things. To find out, consider these questions:
Were you surprised by the time you spent with television? Was it more or less than you thought?
Do you remember times when the set was just "on", with no one watching? If so why was it left on?
How much time was TV viewing a family activity? What kinds of shows were popular with everyone? Which shows were not?
Did you talk about those shows you watched as a family? What kinds of discussions did you have?
Did you use your newspaper TV listings or *TV Guide* in helping you to choose what to watch? Or did you just turn on the set to see what was on?
Would you want to change the way TV is part of your family's life? If so, how?

Family members, write in your names here.					
MONDAY					
TUESDAY					
WEDNESDAY					
THURSDAY					
FRIDAY					
SATURDAY					
SUNDAY					
TOTAL HOURS					

On the back of this sheet, record the names of shows you watched during the week.
Keep track especially of those programs that all or most of your family watched together.

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*Reprinted, with permission, from Debra Lieberman, *The Trainer's Manual, Vol. II, Workshop Handouts*, to accompany *Critical T.V. Viewing Workshops for High School Teachers, Parents and Community Leaders* (San Francisco: Far West Laboratory, 1980).

GLOSSARY

GENERAL TERMS

Boom — a microphone suspended from above during TV productions.

Control room — the area of a studio where video and sound equipment is kept and where such equipment is operated by program technicians.

Credits — titles listing the different people involved in a television production and the nature of their contribution.

Critical television viewer — a person with the skills to analyse what is seen and heard on television.

Director — person with the immediate responsibility for the artistic and technical aspects of a television production; the one who plans the scenes and instructs the actors and technicians.

Documentary — a type of program which usually includes some or all of these elements: expanded or in-depth reports on current or historic events; background information; specific point of view.

Dolly — a small cart used to roll or otherwise move a camera while shooting.

Editing — the process of arranging the different shots and sequences into a unified whole.

Flashback — a video technique in which present action is interrupted to dramatize past action.

Laugh tracks — recordings of audience reactions used in TV to simulate the presence of enthusiastic response in the absence of a real audience.

Lip sync — a technique used by singers or actors in which a recording replaces live sound, and the performer mimics the words. Lip movement is then synchronized with the recording to simulate live performances. Also used in dubbing foreign-language films and videotapes.

Media — various means of communicating which provide information or entertainment: television, movies, radio, books, magazines, newspapers. . . .

Monitor — a TV screen on which performers and crew can watch themselves or whatever is on camera as the show is being produced.

Network — a system of television stations: e.g., CBC, CTV, Global . . . .

Pilot — a sample show which may or may not become a series on TV.

Portapak — a lightweight portable television camera and recorder which can be used for on-location television production.

Prime time — the hours of TV viewing when a show can count on the most viewers — in most cities, between 7:00 p.m. and 11:00 p.m. on week nights.

Producer — the person in charge of coordinating all the activities connected with the production of a television program or series.

Scenario — a general written description of the setting, action and dialogue of a television performance.

Situation comedy (sit-com) — a type of program which includes some or all of these elements: same basic cast and sets in every episode; half-hour format (usually); laughter; theme song quick pacing; limited number of sets; one problem revolving around the relationships of main characters; problem solved by the end of each program.

Sponsor — a company or organization which buys time on a program in order to sell its product or service.

Storyboard — a step-by-step layout of the pictures, dialogue and sound which will make up the production.

TV narrative — a story told on television that closely parallels the form and content of the short story.

SHOTS AND CAMERA ANGLES

Shot or take — the picture taken by the camera: that which is recorded on film in one uninterrupted run of the camera; the basic unit of film.

Sequence — a series of shots shown together, related by theme, plot, or location; usually several sequences are put together to make even a short film.

Camera distance — the real or apparent distance of the camera from the subject. This distance determines the types of shots:

- **Closeup** — shows the subject filling the whole screen: used for dramatic effect and detail. An extreme closeup might show only a hand reaching into a pocket.
- **Medium shot** — shows the subject and some of the background.
- **Long shot or establishing shot** — shows the complete background of the scene: used at the beginning of a scene to establish the setting.
- **Full shot** — the entire person is seen in the shot.
- **Reaction shot** — a shot inserted in a sequence (usually a closeup) to show the effect of one person's words or actions on the other people in the scene. More generally, any shot showing the reaction to anything.

Camera angle — the position of the camera in relation to the subject:

- **High-angle shot** — camera is above the subject, looks down on the subject.
- **Eye-level shot** — camera is on the same plane as the subject; also called flat shot.
- **Low-angle shot** — camera is below the subject, looks upwards; appears to increase the size and, psychologically, the importance of the person or object filmed.
- **Reverse-angle shot** — shot taken from behind the subject, to show what he or she is seeing; often supplies a subjective view of the scene.
- **Aerial shot** — taken from the air, looking far down on the subject.

NOTE: Camera distance and angle should vary from shot to shot; such changes should, however, make sense within the context of the film sequence.

Basic camera moves — can be actual or simulated movements of the camera, in relation to the subject:

- **Pan** — the camera moves horizontally across the subject or scene.
- **Follow** — like the pan, but the camera is directed at an individual or object as it moves through a scene.
- **Tilt (up and down)** — the camera moves vertically up or down the subject.
- **Zoom (in or out)** — the camera appears to move in or out on the subject.
- **Dolly or Track (in or out)** — the camera is mounted on a dolly or small cart to move alongside, toward, or away from the subject.

Effects — Term given to the wide variety of editing and camera tricks available:

- **Cut** — the jump from one picture to another; the immediate change from one shot to the next.
- **Jump cut** — an abrupt change from shot to shot or from scene to scene.
- **Dissolve** — a visual effect in which one shot disappears slowly at the same time another is appearing.
- **Fade in** — a shot which begins totally over- or under-exposed (white or black) and which gradually becomes properly exposed.
- **Fade out** — a shot ending by change from proper exposure to extreme under- or over-exposure.
- **Split screen** — an effect in which several shots are shown at once, side by side.
- **Superimposition** — an effect similar to double exposure: two shots are shown at once, one superimposed on the other.

COMMON ABBREVIATIONS

BCU or TCU — big closeup or tight closeup: very narrow angle, usually just one feature of an object or subject so that it completely fills the frame.

CU — closeup.

DB — dolly back: the camera is moved back.

DI — dolly in: the camera is moved closer to the subject.

DIS — dissolve.

ECU — extreme closeup.

FI — fade in.

FO — fade out.

FS or CS — full shot or cover shot.

LS — long shot.

MCU — medium closeup.

MOS — "mit out sound": no sound recording. The word *mit* was first used by a European director, and the phrase stuck.

MS — medium shot.

OC — on camera; indicates that the subject is to be shot on camera, with or without sound.

PR-PL — pan right, pan left.

SFX — special effects.

SUPER — superimposition.

TU-TD — tilt up, tilt down.

2-S — two-shot; composition of two performers or objects.

3-S — three-shot; composition of three performers or objects.

VO — voiceover: a voice is heard talking over the picture.

Adapted, with permission from *Media Literacy 1: Television — A Resource Guide for the Junior-Middle Schools*, Stephen Storoschuk, Barry Duncan and Terry Mazaris, eds., (Etobicoke: The Board of Education for Etobicoke, 1981), pp. 34-37.

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RELEVANCE CHART

The following chart indicates the level and curriculum applications for each of the programs recommended for use with this unit.

Lesson Reference	Series	Program Length	Level	Curriculum Applications
1.	*Barbapapa*	30 min packages (each episode 5 min long)	Primary Junior Intermediate	Language Arts, Art (Animation Techniques)
2.	*MathMakers*	15 min	Junior	Math
	Grange Hill	25 min	Junior Intermediate	Social Studies, Values, Guidance, Language Arts
	Inside/Out	15 min	Junior	Health Education, Values
	Ballet Shoes	25 min	Junior	Language Arts (Visual Story)
	Follow Me	25 min	Junior Intermediate	Language Arts (Visual Story)
	Read All About It	15 min	Junior	Language Arts (Visual Story)
3.	*The Prince and the Pauper*	25 min	Junior Intermediate	Language Arts (Visual Story)
4.	*The Science Alliance*	15 min	Junior	Science
5.	*Tom Grattan's War*	25 min	Junior Intermediate Senior	Language Arts, Screen Education
	Classics Dark and Dangerous	30 min	Intermediate Senior	Language Arts
Further suggestions:				
	Adventures in History	30 min	Intermediate Senior	Canadian History, Language Arts
	Doombolt Chase	25 min	Junior Intermediate	Language Arts (Visual Story)
	Ghosts of Motley Hall	30 min	Intermediate Senior	Language Arts (Visual Story)
	Midnight Is a Place	25 min	Intermediate	Language Arts (Visual Story) Social Studies
	The Phoenix and the Carpet	30 min	Primary Junior	Language Arts (Visual Story)
	Stories Round the World	30 min	Intermediate Senior	Language Arts, Social Studies
	Tom's Midnight Garden	25 min	Junior	Language Arts (Visual Story)

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